802.11g Wireless LAN Outdoor CPE AP/Router

WAP-6200

User's Manual

Version 2.0

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FCC Caution:

To assure continued compliance. (Example-use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the Following two conditions: (1) This device may not cause harmful interference, and (2) this Device must accept any interference received, including interference that may cause undesired operation.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-17 and EN 55024 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328-2 has been conducted. These are considered relevant and sufficient.

CE in which Countries where the product may be used freely:

Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

France: except the channel 10 through 13, law prohibits the use of other channels

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

WEEE regulation

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

User's Manual for PLANET 802.11g WLAN Outdoor CPE AP/Router
Model: WAP-6200
Rev: 2.0 (February, 2009)
Part No. EM-WAP6200

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Chapter 1 Introduction

The WAP-6200 is an outdoor 802.11g CPE AP/Router with 14dBi antenna built in. This manual describes the details of how to manage this equipment.

1.1 Package Contents

Make sure that you have the following items:

- WAP-6200 x 1
- PoE injector x 1
- Power Cord x 1
- Mounting Kit x 1
- CD x 1
- Quick Installation Guide x 1

Note:	If any of the above items are missing, contact your supplier as soon as possible.

1.2 Features

- IEEE 802.11b/g Dual Standards Compatible
- Provides protection against rigorous weather conditions
- Default 200mW output power, 5 levels of adjustable transmit power control
- Power over Ethernet design
- Built-in 14dBi patch Antenna
- Multiple Wireless Access Modes: AP, Client, WDS, AP+WDS, Repeater
- Two Operating Modes: Gateway, Bridge, WISP
- Supports SPI Firewall, QoS functions
- MAC/IP/URL filtering
- Supports WEP, WPA, WPA2, 802.1x Authentication
- Web base configuration

1.3 Specification

Model	WAP-6200
Standard	IEEE 802.11b, 802.11g
Signal Type & Modulation	OFDM with BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, CCK
Port	LAN x1, WAN x 1

Antenna	Built-in 14dBi patch antenna H-plane: 30 degree E-plane: 30 degree	
Output Power	26±1dBm@11b 19±1dBm@11g 5 levels adjustable (100%, 50%, 25%, 10%, 5%)	
Sensitivity	802.11b: -80 dBm@8%PER 802.11g: -68 dBm@8%PER	
System Operating mode	Gateway, Bridge, WISP (NAT Router)	
Wireless Access Mode	AP, Client, WDS, AP+WDS, Repeater	
Security	WEP setting – Authentication mode: Enterprise(RADIUS) / Personal (PSK) – Shared keys input type: HEX / ASCII – Shared keys length: (64-bit, 128-bit) – Default WEP Key to use (1-4) WPA (TKIP) setting – Authentication mode: Enterprise (RADIUS)/Personal(PSK) – PassPhrase / Hex (64 characters) WPA 2(AES) setting – Authentication mode: Enterprise (RADIUS) / Personal(PSK) – PassPhrase / Hex (64 characters) 802.1x Authentication setting	
Data Rate	802.11g	54Mbps, 48Mbps, 36Mbps, 24Mbps, 18Mbps, 12Mbps, 9Mbps, 6Mbps
	802.11b	11Mbps, 5.5Mbps, 2Mbps, 1Mbps
Dimensions (L x W x H)	130 x 80 x 35 mm	
Weight	1.11 Kg (net weight)	
Environmental Specification	Operating Temperature: -10~60°C Relative Humidity: 0~90%(non-condensing) Storage Temperature: -20~70°C Relative Humidity: 0~95%(non-condensing)	
Power Requirement	12V DC, 1.25A (private PoE interface through either LAN / WAN RJ-45 port)	
Electromagnetic Compatibility	FCC, CE	

1.4 Wireless Performance

The following information will help you utilizing the wireless performance, and operating coverage of WAP-6200.

1. Site selection

To avoid interferences, please locate WAP-6200 and wireless clients away from transformers, microwave ovens, heavy-duty motors, refrigerators, fluorescent lights, and other industrial equipments. Keep the number of walls, or ceilings between AP and clients as few as possible; otherwise the signal strength may be seriously reduced. Place WAP-6200 in open space or add additional WAP-6200 as needed to improve the coverage.

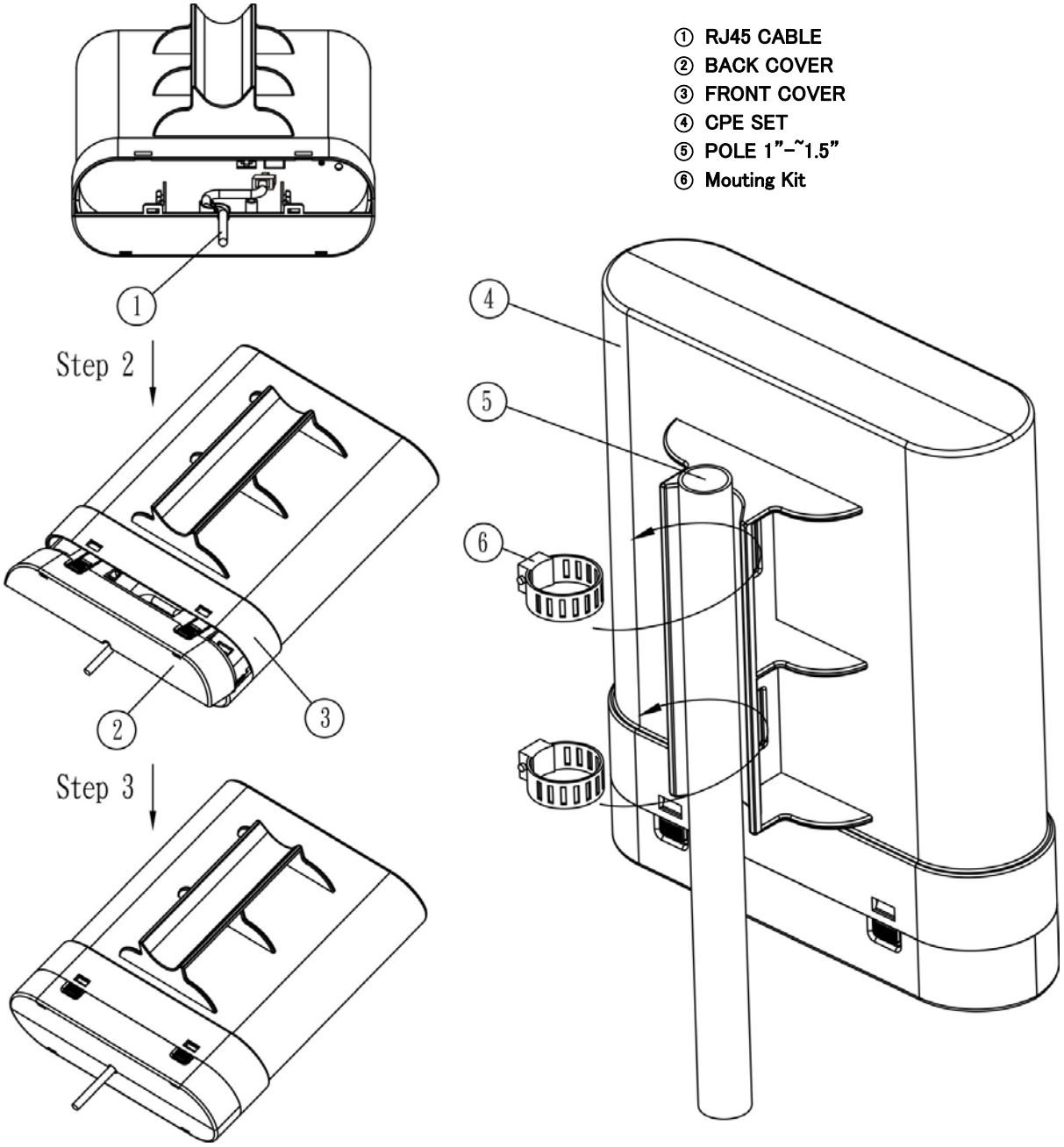
2. Environmental factors

The wireless network is easily affected by many environmental factors. Every environment is unique with different obstacles, construction materials, weather, etc. It is hard to determine the exact operating range of WAP-6200 in a specific location without testing.

Chapter 2 Hardware Installation

Before you proceed with the installation, it is necessary that you have enough information about the WAP-6200.

Hardware Installation



Before you proceed with the installation, it is necessary that you have enough information about WAP-6200.

1. Use a standard UTP cable to connect either RJ-45 port of the WAP-6200 and another way connect to “POE” port of PoE injector.

Note	1. Strongly suggest using SFTP cable, for better protection of the data wire. 25-meter SFTP cable also available by order, the part no is WL-SFTP-25. Please contact with local dealer for more information 2. 2. Pleas also refer to Chapter 5 or Chapter 6 for more about LAN port or WAN port selection. For the first time installation, it is suggested to connect to LAN.

2. Using Category 3 or higher UTP or STP cable, connect the “LAN” port of PoE Injector to a 10Mbps or 10/100Mbps Ethernet hub or switch, and connect the PC on the same LAN for management.

3. Locate an optimum location and use the provided Mounting kit to tie the WAP-6200 to a pole.

Note	***1.*** To avoid thunder strike, consider to install ELA-100, thunder arrester toward the CPE AP and the PoE injector. ***2.*** For secured reason, while install the CPE AP, please be aware for the electric wires around, and tighten the pole. Without tighten the CPE AP, the pole and the installed site is with electric wire around, there could be danger of being hurt by falling or lethal injury.

4. Connect the power cord to the PoE Injector, and plug it into an AC outlet to power on the WAP-6200.

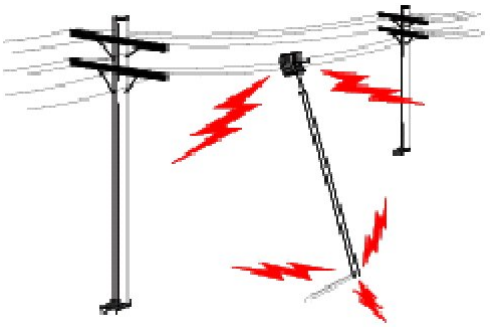
Note	***1.*** ONLY use the power adapter supplied with the WAP-6200. Otherwise, the product may be damaged. ***2.*** Strongly suggest using SFTP cable whether the cable exposed outdoor for waterproof and avoiding thunder stroke.

OUTDOOR INSTALLATION WARNING

IMPORTANT SAFETY PRECAUTIONS:

LIVES MAY BE AT RISK! Carefully observe these instructions and any special instructions that are included with the equipment you are installing.

CONTACTING POWER LINES CAN BE LETHAL. Make sure no power lines are anywhere where possible contact can be made. Antennas, masts, towers, guy wires or cables may lean or fall and contact these limes. People may be injured or killed if they are touching or holding any part of equipment when it contacts electric lines. Make sure there is NO possibility that equipment or personnel can come in contact directly or indirectly with power lines.



Assume all overhead lines are power lines.

The horizontal distance from a tower, mast or antenna to the nearest power line should be at least twice the total length of the mast/antenna combination. This will ensure that the mast will not contact power if it falls either during installation or later.

TO AVOID FALLING, USE SAFE PROCEDURES WHEN WORKING AT HEIGHTS ABOVE GROUND.

- Select equipment locations that will allow safe, simple equipment installation.
- Don't work alone. A friend or co-worker can save your life if an accident happens.
- Use approved non-conducting lasers and other safety equipment. Make sure all equipment is in good repair.
- If a tower or mast begins falling, don't attempt to catch it. Stand back and let it fall.
- If anything such as a wire or mast does come in contact with a power line, **DON'T TOUCH IT OR ATTEMPT TO MOVE IT**. Instead, save your life by calling the power company.
- Don't attempt to erect antennas or towers on windy days.

MAKE SURE ALL TOWERS AND MASTS ARE SECURELY GROUNDED, AND ELECTRICAL CABLES CONNECTED TO ANTENNAS HAVE LIGHTNING ARRESTORS. This will help prevent fire damage or human injury in case of lightning, static build-up, or short circuit within equipment connected to the antenna.

- The base of the antenna mast or tower must be connected directly to the building protective ground or to one or more approved grounding rods, using 1 OAWG ground wire and corrosion-resistant connectors.
- Refer to the National Electrical Code for grounding details.

IF A PERSON COMES IN CONTACT WITH ELECTRICAL POWER, AND CANNOT MOVE:

- **DON'T TOUCH THAT PERSON, OR YOU MAY BE ELECTROCUTED.**
- Use a non-conductive dry board, stick or rope to push or drag them so they no longer are in contact with electrical power.

Once they are no longer contacting electrical power, administer CPR if you are certified, and make sure that emergency medical aid has been requested.

Chapter 3 Web Configuration

Web configuration provides a user-friendly graphical user interface (web pages) to manage your WAP-6200. An AP with an assigned IP address will allow you to monitor and configure via web browser (e.g., MS Internet Explorer or Netscape).

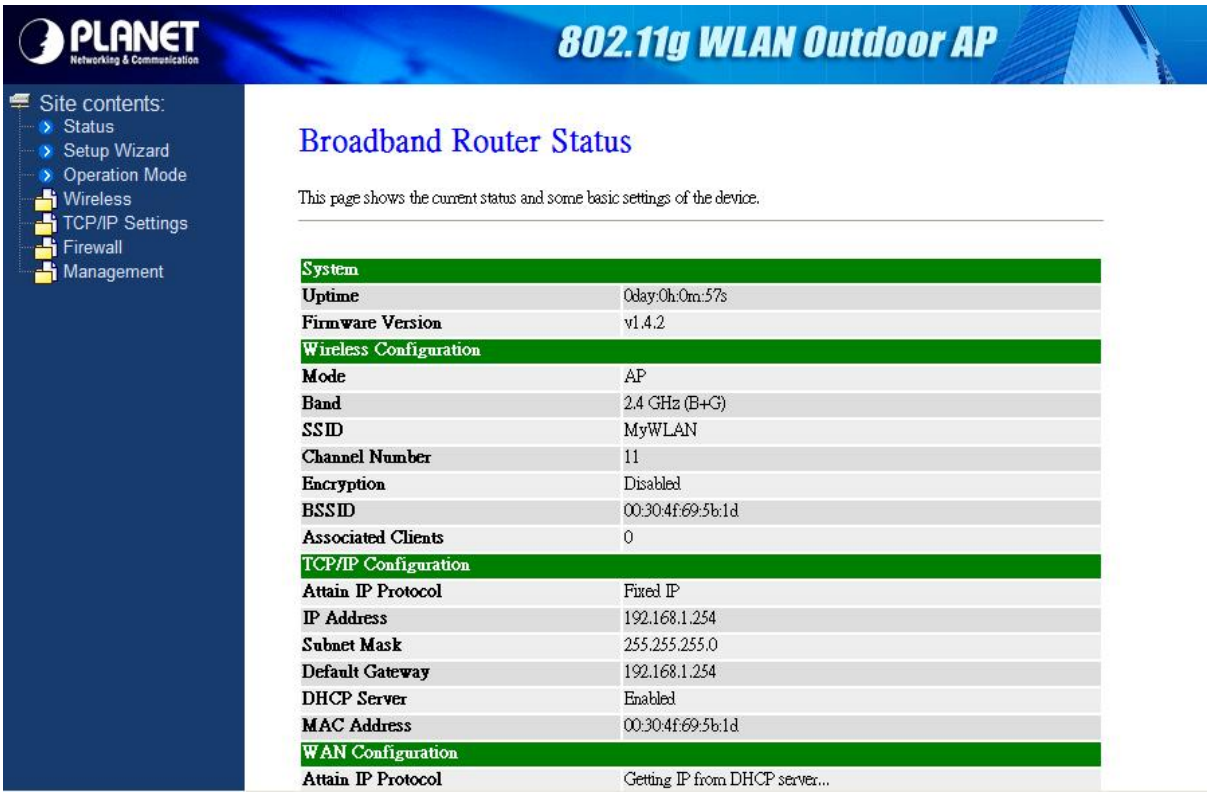
1. Open your web browser.
2. Enter the IP address of your WAP-6200 in the address field (default IP address is **http://192.168.1.254**). Please note that your PC's IP address should be on the same IP subnet of the WAP-6200. For example, you can configure your PC's IP address to 192.168.1.2 if WAP-6200 is with IP 192.168.1.254.

   Default IP Address: **http://192.168.1.254**

   Default IP subnet mask: **255.255.255.0**

   WEB login User Name: **<empty>**

   WEB login Password: **<empty>**



For OS of Microsoft Windows 95/ 98/ Me:

1. Click the Start button and select Settings, then click Control Panel. The Control Panel window will appear.

Note: Windows Me users may not see the Network control panel. If so, select View all Control Panel options on the left side of the window

2. Move mouse and double-click the right button on Network icon. The Network window will appear.
3. Check the installed list of Network Components. If TCP/IP is not installed, click the Add button to install it; otherwise go to step 6.

4. Select Protocol in the Network Component Type dialog box and click Add button.
5. Select TCP/IP in Microsoft of Select Network Protocol dialog box then click OK button to install the TCP/IP protocol, it may need the Microsoft Windows CD to complete the installation. Close and go back to Network dialog box after the TCP/IP installation.
6. Select TCP/IP and click the properties button on the Network dialog box.
7. Select Specify an IP address and type in values as following example.
   IP Address: 192.168.1.1, any IP address within 192.168.1.1 to 192.168.1.253 is good to connect the Wireless LAN Access Point.
   IP Subnet Mask: 255.255.255.0
8. Click OK and reboot your PC after completes the IP parameters setting.

For OS of Microsoft Windows 2000, XP:

1. Click the Start button and select Settings, then click Control Panel. The Control Panel window will appear.
2. Move mouse and double-click the right button on Network and Dial-up Connections icon. Move mouse and double-click the Local Area Connection icon. The Local Area Connection window will appear. Click Properties button in the Local Area Connection window.
3. Check the installed list of Network Components. If TCP/IP is not installed, click the Add button to install it; otherwise go to step 6.
4. Select Protocol in the Network Component Type dialog box and click Add button.
5. Select TCP/IP in Microsoft of Select Network Protocol dialog box then click OK button to install the TCP/IP protocol, it may need the Microsoft Windows CD to complete the installation. Close and go back to Network dialog box after the TCP/IP installation.
6. Select TCP/IP and click the properties button on the Network dialog box.
7. Select Specify an IP address and type in values as following example.
   IP Address: 192.168.1.1, any IP address within 192.168.1.1 to 192.168.1.253 is good to connect the Wireless LAN Access Point.
   IP Subnet Mask: 255.255.255.0
8. Click OK to complete the IP parameters setting.

For OS of Microsoft Windows NT:

1. Click the Start button and select Settings, then click Control Panel. The Control Panel window will appear.
2. Move mouse and double-click the right button on Network icon. The Network window will appear. Click Protocol tab from the Network window.
3. Check the installed list of Network Protocol window. If TCP/IP is not installed, click the Add button to install it; otherwise go to step 6.
4. Select Protocol in the Network Component Type dialog box and click Add button.
5. Select TCP/IP in Microsoft of Select Network Protocol dialog box then click OK button to install the TCP/IP protocol, it may need the Microsoft Windows CD to complete the installation. Close and go back to Network dialog box after the TCP/IP installation.
6. Select TCP/IP and click the properties button on the Network dialog box.

7. Select Specify an IP address and type in values as following example.

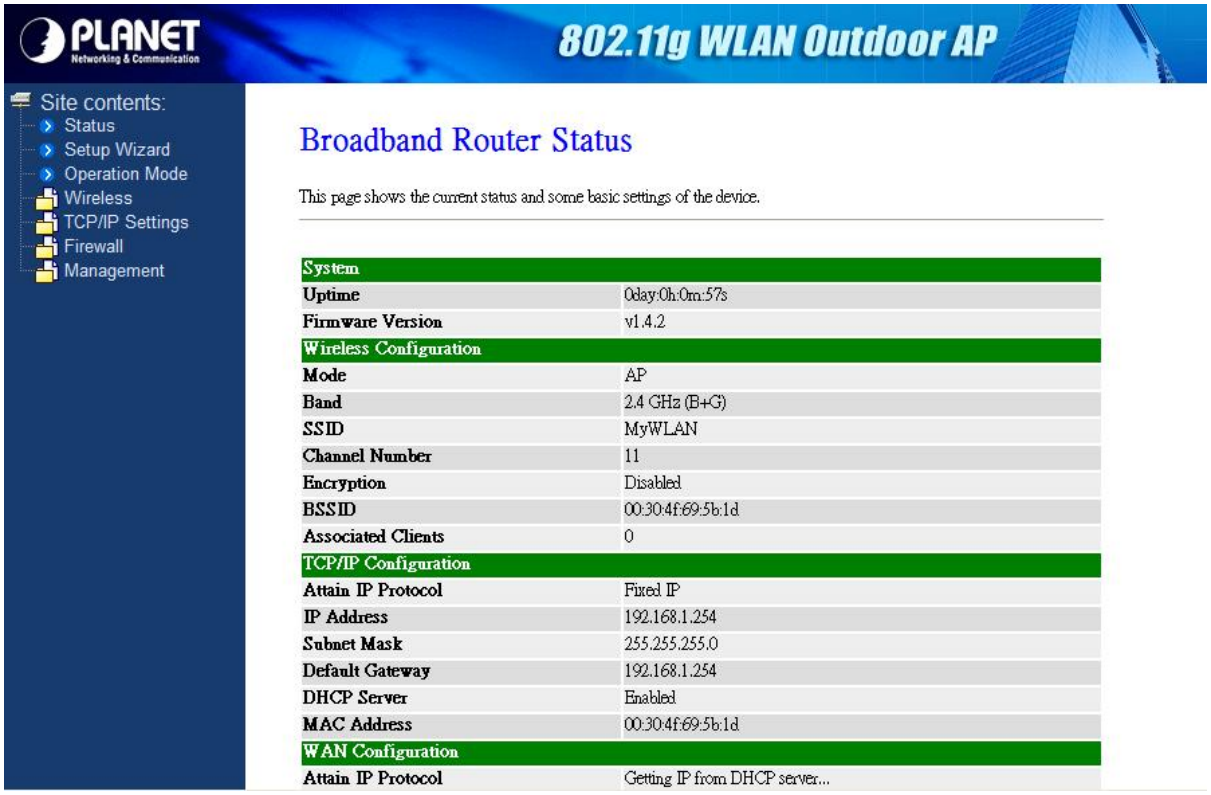
   IP Address: 192.168.1.1, any IP address within 192.168.1.1 to 192.168.1.253 is good to connect the Wireless LAN Access Point.

   IP Subnet Mask: 255.255.255.0

8. Click OK to complete the IP parameters setting.

Chapter 4 Status

This page shows the current status and some basic settings of the device, includes system, wireless Configuration, TCP/IP Configuration and WAN configuration information.

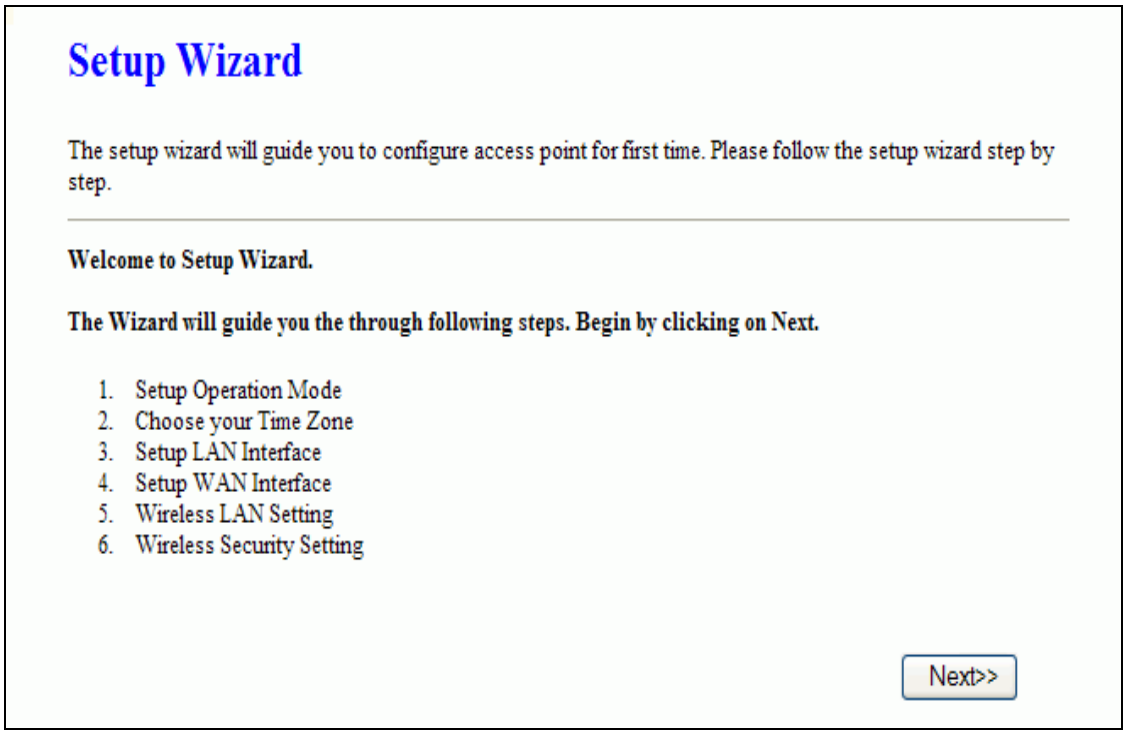


Parameter	Description
Uptime	It shows the duration since WAP-6200 is powered on.
Firmware version	It shows the firmware version of WAP-6200.
Mode	It shows wireless operation mode.
Band	It shows the current wireless operating frequency.
SSID	It shows the SSID of this WAP-6200. The SSID is the unique name of WAP-6200 and shared among its service area, so all devices attempts to join the same wireless network can identify it.
Channel Number	It shows the wireless channel connected currently.
Encryption	It shows the status of encryption function.
BSSID	It shows the BSSID address of the WAP-6200. BSSID is a six-byte address.
Associated Clients	It shows the number of connected clients (or stations, PCs).
Attain IP Protocol	It shows type of connection.

IP Address	It shows the IP address of LAN interfaces of WAP-6200.
Subnet Mask	It shows the IP subnet mask of LAN interfaces of WAP-6200.
Default Gateway	It shows the default gateway setting for LAN interfaces outgoing data packets.
DHCP Server	It shows the DHCP server is enabled or not.
MAC Address	It shows the MAC address of LAN interfaces of WAP-6200.
Attain IP Protocol	It shows how the WAP-6200 gets the IP address. The IP address can be set manually to a fixed one or set dynamically by DHCP server or attain IP by PPPoE / PPTP connection.
IP Address	It shows the IP address of WAN interface of WAP-6200.
Subnet Mask	It shows the IP subnet mask of WAN interface of WAP-6200.
Default Gateway	It shows the default gateway setting for WAN interface outgoing data packets.
DNS1/DNS2/DNS3	It shows the DNS server information.
MAC Address	It shows the MAC address of WAN interface of WAP-6200.

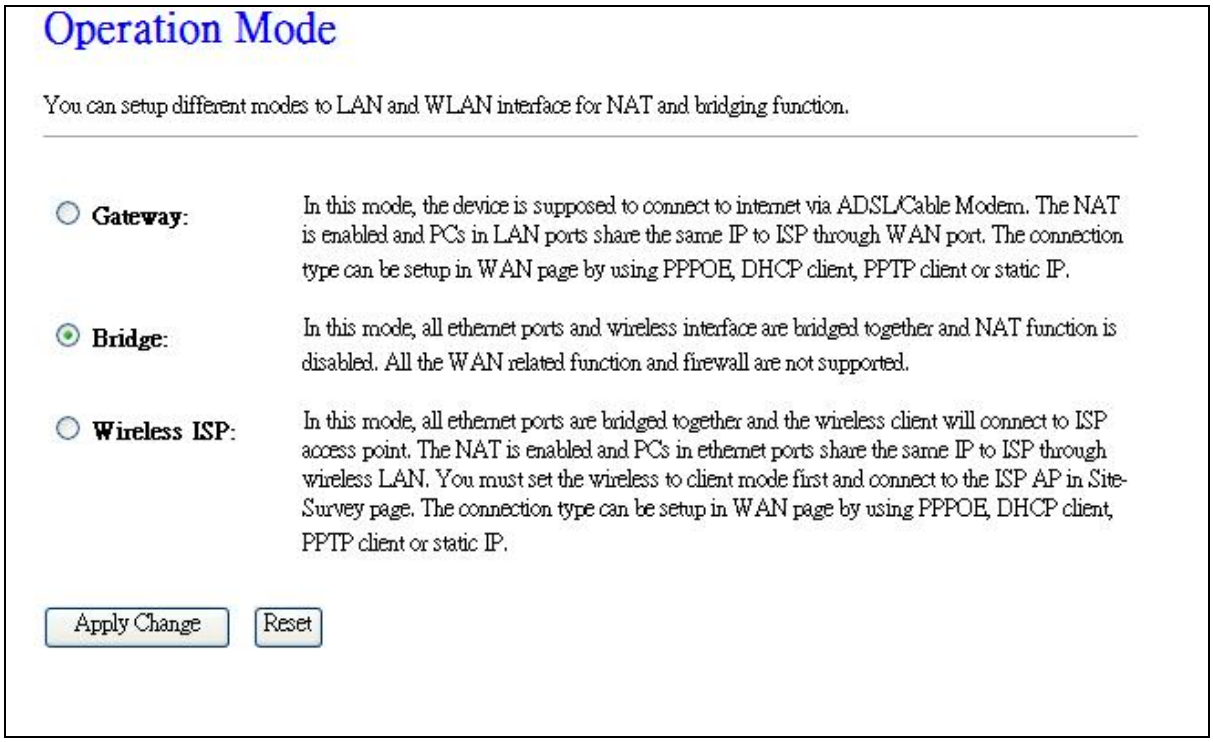
Chapter 5 Setup Wizard

This page guides you to configure WAP-6200 first time.


Setup Wizard
The setup wizard will guide you to configure access point for first time. Please follow the setup wizard step by step.
Welcome to Setup Wizard.
The Wizard will guide you the through following steps. Begin by clicking on Next.
1. Setup Operation Mode
2. Choose your Time Zone
3. Setup LAN Interface
4. Setup WAN Interface
5. Wireless LAN Setting
6. Wireless Security Setting
Next>>

Step1: Operation Mode

This page followed by Setup Wizard page to define the operation modes. There are 2 modes allow you configure – **Gateway**, **Bridge** and **WISP** mode. The default value is "**Bridge**" mode.

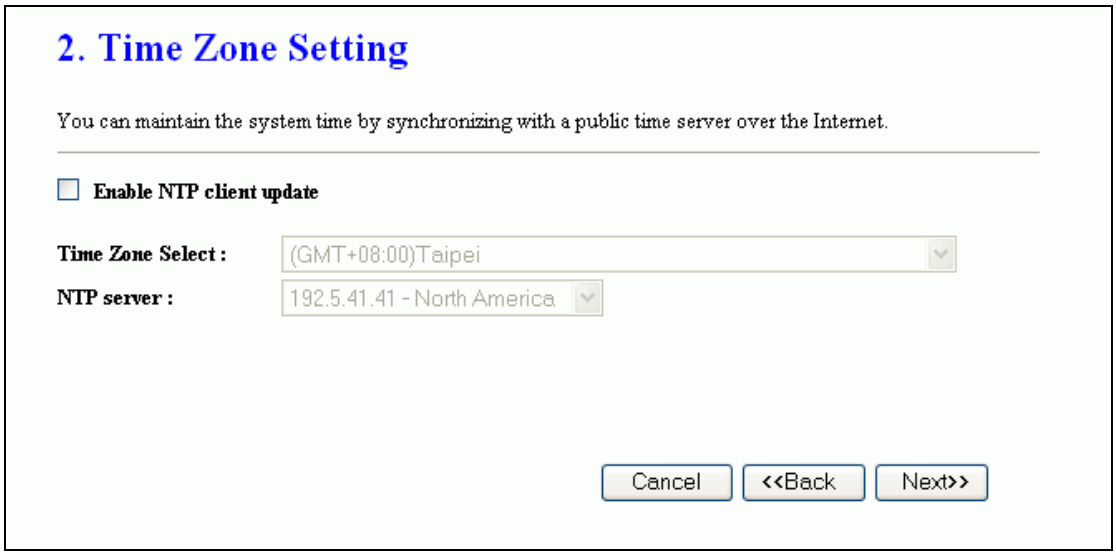

Operation Mode
You can setup different modes to LAN and WLAN interface for NAT and bridging function.
Gateway:
In this mode, the device is supposed to connect to internet via ADSL/Cable Modem. The NAT is enabled and PCs in LAN ports share the same IP to ISP through WAN port. The connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client or static IP.
Bridge:
In this mode, all ethernet ports and wireless interface are bridged together and NAT function is disabled. All the WAN related function and firewall are not supported.
Wireless ISP:
In this mode, all ethernet ports are bridged together and the wireless client will connect to ISP access point. The NAT is enabled and PCs in ethernet ports share the same IP to ISP through wireless LAN. You must set the wireless to client mode first and connect to the ISP AP in Site-Survey page. The connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client or static IP.
Apply Change
Reset

Basically, the WAP-6200 is with three physical interfaces, Wireless interface, LAN interface, and WAN interface. However, with the three operation modes above, the logical interface could have some changes for the modes selected.

Operation Modes	Physical Interface	Logical Interface	Remark
Gateway	LAN	LAN	
	WAN	WAN (NAT Router)	
	Wireless	LAN	Bridged LAN
Bridge	LAN	LAN	
	WAN	LAN	Bridged LAN
	Wireless	LAN	Bridged LAN
Wireless ISP	LAN	LAN	
	WAN	LAN	Bridged LAN
	Wireless	WAN (NAT Router)	

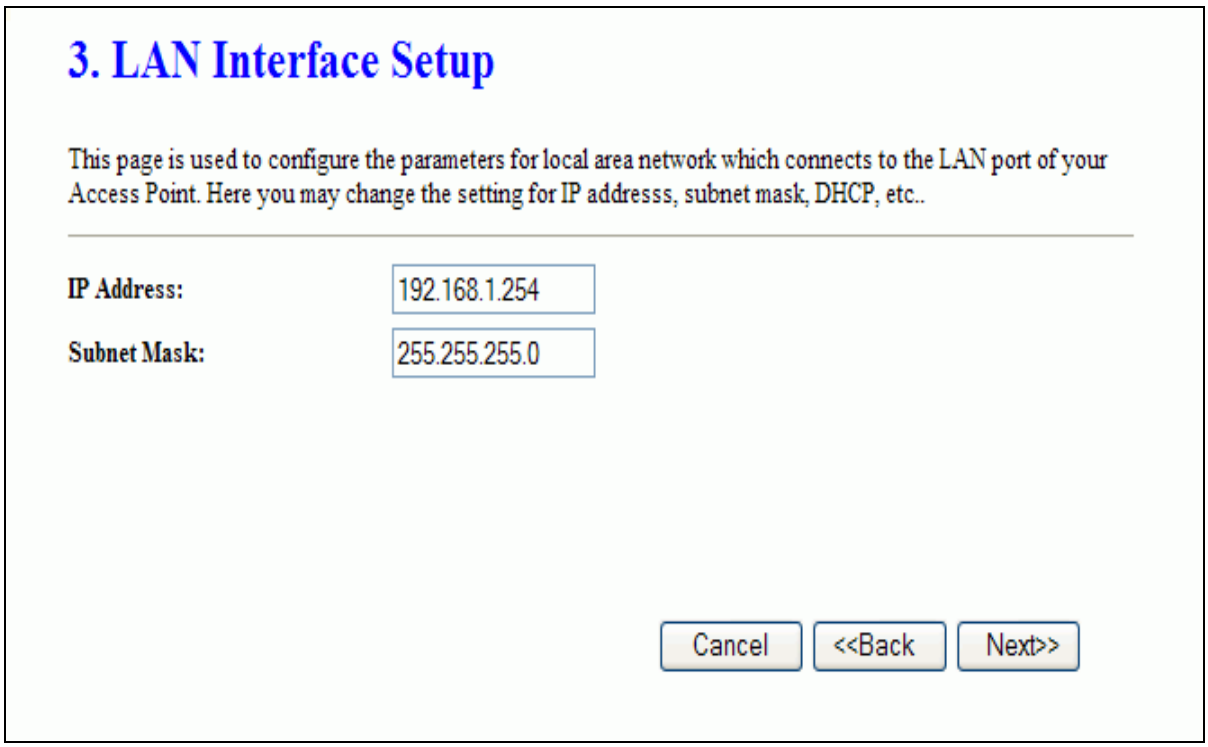
Step2: Time Zone Setting

This page is used to enable and configure NTP client.


2. Time Zone Setting
You can maintain the system time by synchronizing with a public time server over the Internet.
Enable NTP client update
Time Zone Select :
(GMT+08:00)Taipei
NTP server :
192.5.41.41 - North America
Cancel
<<Back
Next>>

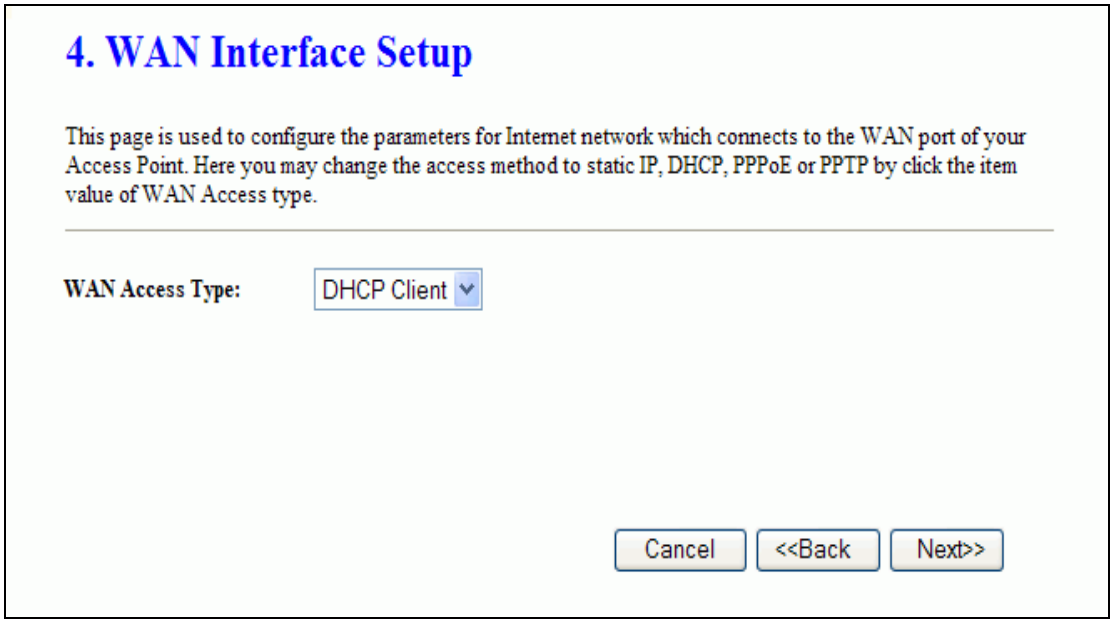
Step3: LAN Interface Setup

This page is used to configure local area network IP address and subnet mask.


3. LAN Interface Setup
This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP addresss, subnet mask, DHCP, etc..
IP Address:
192.168.1.254
Subnet Mask:
255.255.255.0
Cancel
<<Back
Next>>

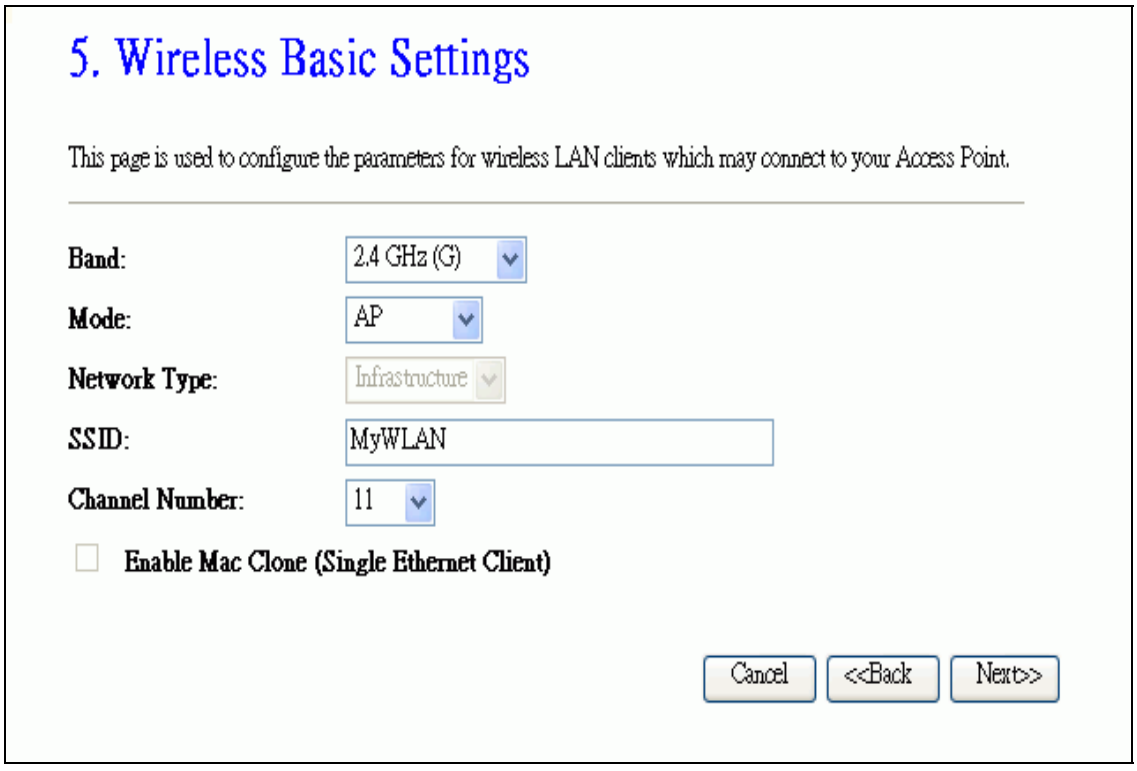
Step4: WAN Interface Setup

This page is used to configure WAN access type.


4. WAN Interface Setup
This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type.
WAN Access Type:
DHCP Client
Cancel
<<Back
Next>>

Step5: Wireless Basic Settings

This page is used to configure basic wireless parameters like Band, Mode, Network Type SSID, Channel Number, Enable Mac Clone (Single Ethernet Client)



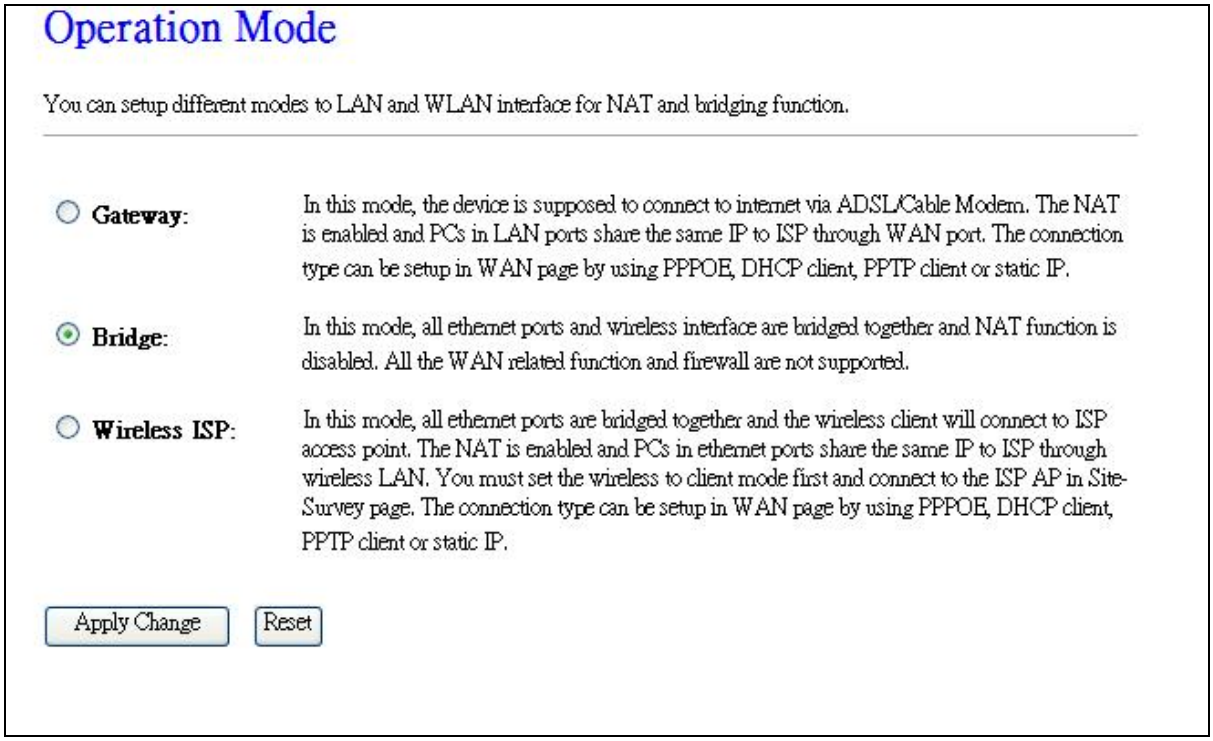
Step6: Wireless Security Setup

This page is used to configure wireless security.

6. Wireless Security Setup
This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.
Encryption:
None
Cancel
<<Back
Finished

Chapter 6 Operation Mode

There are 2 modes allow you configure – **Gateway, Bridge** and **WISP** mode.
The default value is **"Bridge"** mode

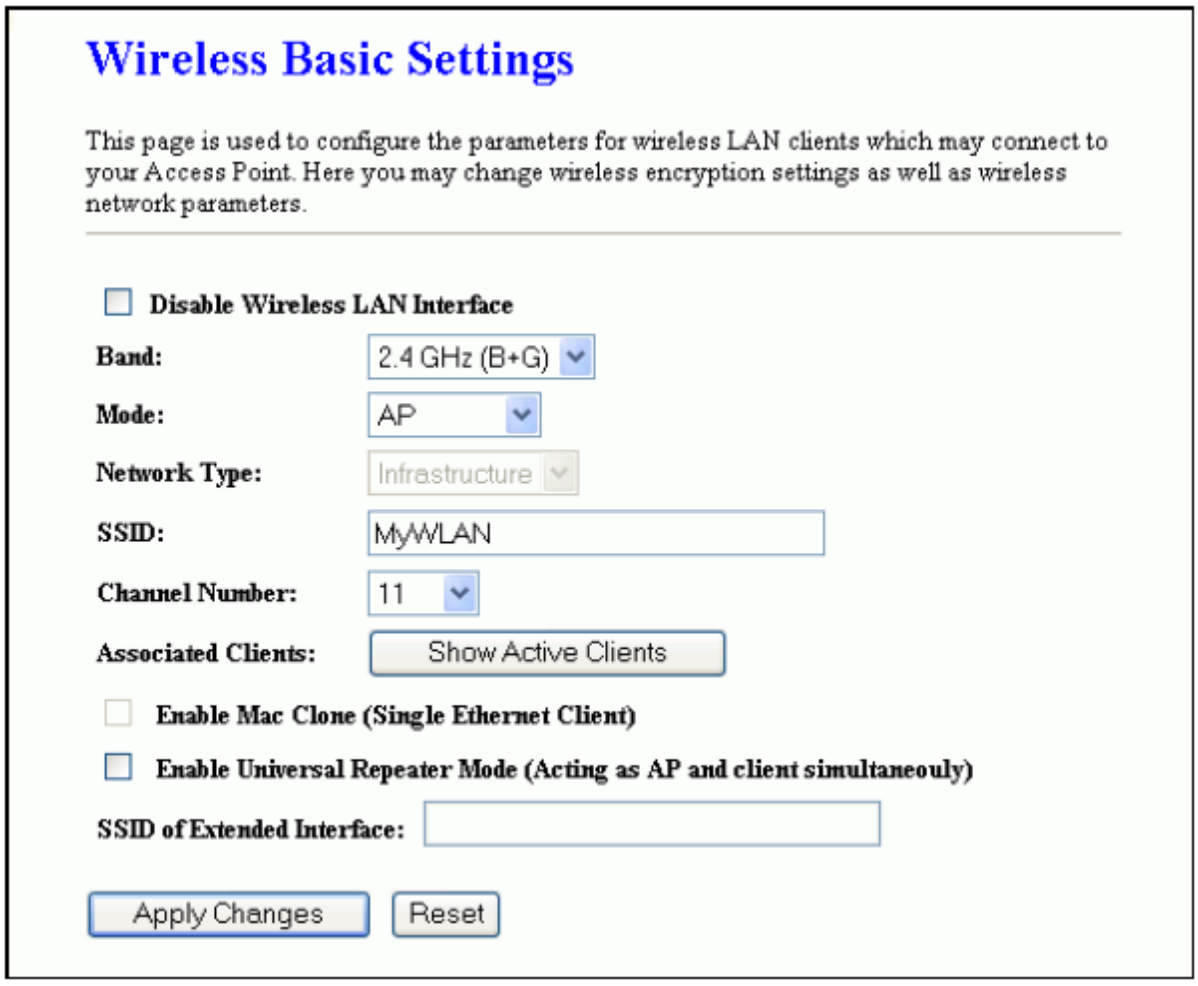

Operation Mode
You can setup different modes to LAN and WLAN interface for NAT and bridging function.
Gateway:
In this mode, the device is supposed to connect to internet via ADSL/Cable Modem. The NAT is enabled and PCs in LAN ports share the same IP to ISP through WAN port. The connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client or static IP.
Bridge:
In this mode, all ethernet ports and wireless interface are bridged together and NAT function is disabled. All the WAN related function and firewall are not supported.
Wireless ISP:
In this mode, all ethernet ports are bridged together and the wireless client will connect to ISP access point. The NAT is enabled and PCs in ethernet ports share the same IP to ISP through wireless LAN. You must set the wireless to client mode first and connect to the ISP AP in Site-Survey page. The connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client or static IP.
Apply Change
Reset

Parameter	Description
Gateway	In this mode, the device is supposed to connect to internet via ADSL/Cable Modem. WAN type:PPPoE, DHCP client, PPTP client or Static IP.
Bridge	Each interface (LAN, WAN and Wireless) regards as bridge. NAT, Firewall and all router's functions are not supported
Wireless ISP	Switch Wireless interface to WAN port and all Ethernet ports in bridge mode. Wireless interface can do all router's functions
Apply Changes	Click the ***Apply Changes*** button to complete the new configuration setting.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

Chapter 7 Wireless

7.1 Basic Settings

This page allows you set wireless relative parameters for your wireless network


Wireless Basic Settings
This page is used to configure the parameters for wireless LAN clients which may connect to your Access Point. Here you may change wireless encryption settings as well as wireless network parameters.
Disable Wireless LAN Interface
Band:
2.4 GHz (B+G)
Mode:
AP
Network Type:
Infrastructure
SSID:
MyWLAN
Channel Number:
11
Associated Clients:
Show Active Clients
Enable Mac Clone (Single Ethernet Client)
Enable Universal Repeater Mode (Acting as AP and client simultaneouly)
SSID of Extended Interface:
Apply Changes
Reset

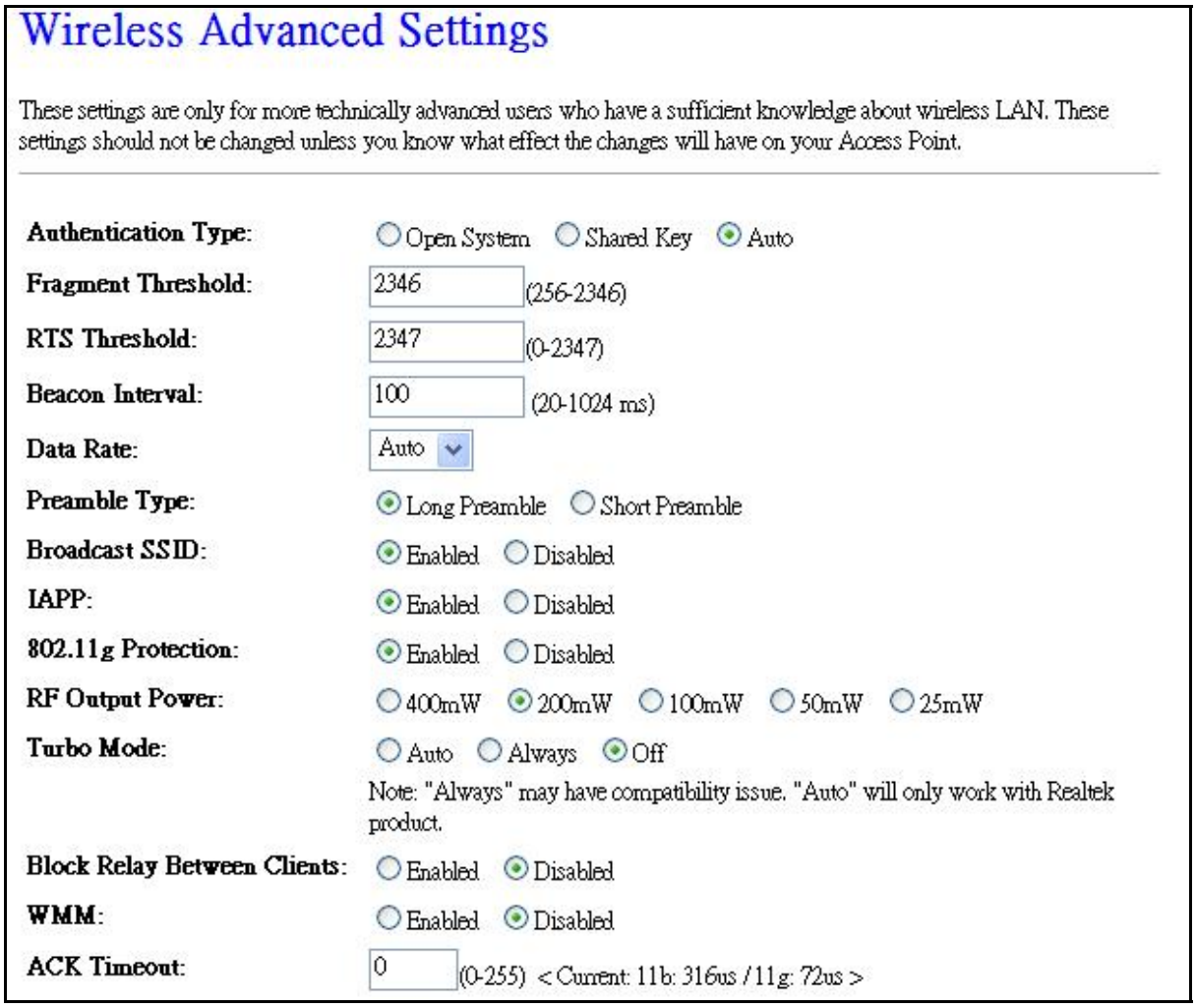
Parameter	Description
Disable Wireless LAN Interface	Click it will disable your Wireless LAN Interface. The Wireless Interface default is **Enable.**
Band	You can select the proper wireless type for your requirements and environment. There are following types: **2.4GHz（B）/ 2.4GHz（G）/ 2.4GHz（B＋G）.**

Mode	WAP-6200 supports not only AP mode, but also provides Client, WDS, AP+WDS and Repeater mode. Please refer to below for detail wireless Basic Settings. In Default, WNRT-6200 will work with AP mode.
SSID	The SSID (Service Set Identification) is the unique name shared among all devices in a wireless network. The SSID must be identical for all devices in the wireless network. Set a string up to 32 letters to identify AP.
Channel	Select the appropriate channel to correspond with your network settings. Auto is the default setting. All devices in your wireless network must use the same channel in order to function correctly.
Associated Clients	Click the "***Show Active Clients"*** button to open Active Wireless Client Table that shows the MAC address, transmit-packet, receive-packet and transmission-rate for each associated wireless client.
Enable MAC Clone	Take Laptop NIC MAC address as wireless client MAC address. **[Client Mode only]**
Enable Universal Repeater mode	Click to enable Universal Repeater Mode.
SSID of extended Interface	Assign SSID's name when enables Universal Repeater Mode.

After changing the configuration setting, please click the "***Apply Changes"*** button to complete the new configuration setting. Otherwise, click the "***Reset"*** button to abort change and recover the previous configuration setting.

7.2 Advanced Settings

This page is only for more technically advanced users who have a sufficient knowledge about wireless LAN. These setting should not be changed unless you know what effect the changes on your Access Point.


Wireless Advanced Settings
These settings are only for more technically advanced users who have a sufficient knowledge about wireless LAN. These settings should not be changed unless you know what effect the changes will have on your Access Point.
Authentication Type: Open System Shared Key Auto
Fragment Threshold: 2346 (256-2346)
RTS Threshold: 2347 (0-2347)
Beacon Interval: 100 (20-1024 ms)
Data Rate: Auto
Preamble Type: Long Preamble Short Preamble
Broadcast SSID: Enabled Disabled
IAPP: Enabled Disabled
802.11g Protection: Enabled Disabled
RF Output Power: 400mW 200mW 100mW 50mW 25mW
Turbo Mode: Auto Always Off
Note: "Always" may have compatibility issue. "Auto" will only work with Realtek product.
Block Relay Between Clients: Enabled Disabled
WMM: Enabled Disabled
ACK Timeout: 0 (0-255) < Current: 11b: 316us / 11g: 72us >

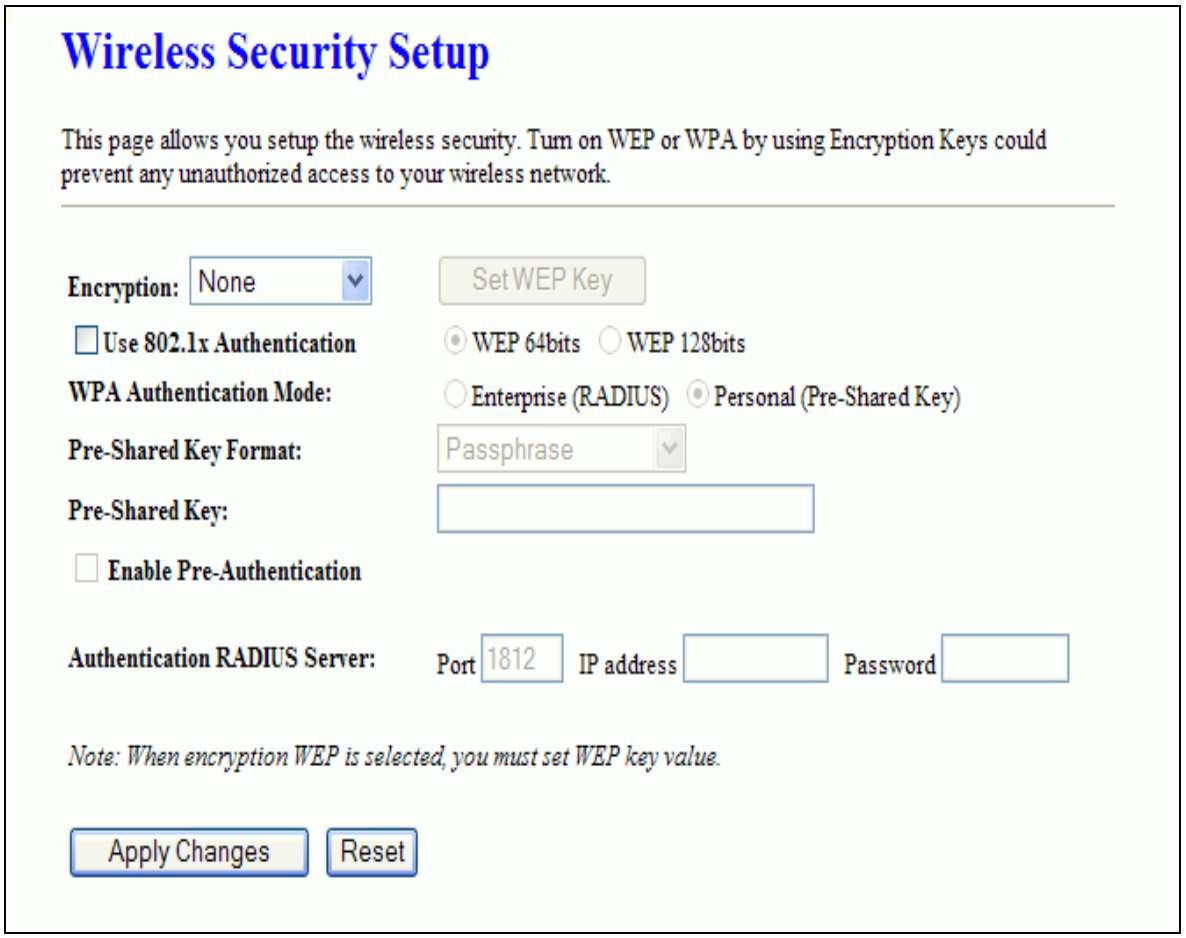
Parameter	Description
Authentication Type	Click to select the authentication type in **Open System**, **Shared Key** or **Auto selection**.
Fragment Threshold	The threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent. Enter a value between 256 and 2346.
RTS Threshold	The RTS (Request To Send) threshold (number of bytes) for enabling RTS/CTS handshake. Data with its frame size larger than this value will perform the RTS/CTS handshake. Set this

	attribute to be larger than the **maximum MSDU** (MAC Service Data Unit) size **TURNS OFF** the RTS/CTS handshake. Set this attribute to **ZERO TURNS ON** the RTS/CTS handshake. Enter a value between 0 and 2347.
Beacon Interval	The Beacon Interval value indicates the frequency interval of the beacon. Enter a value between 20 and 1024. A beacon is a packet broadcast by the Router to synchronize the wireless network.
Data Rate	Select the transmission data rate from pull-down menu. Data rate can be auto-select, 11M, 5.5M, 2M or 1Mbps.
Preamble Type	Click to select the **Long Preamble** or **Short Preamble** support on the wireless data packet transmission.
Broadcast SSID	Click to enable or disable the SSID broadcast function.
IAPP	Click to enable or disable the IAPP function.
802.11g protection	Protect 802.11b user.
RF Output Power	To adjust transmission power level.
Turbo Mode	Click to Enable/Disable turbo mode.(Only apply to WLAN IC of Realtek).
Block Relay Between Clients	Click Enabled/Disabled to decide if blocking relay packets between clients.
WMM	Click Enabled/Disabled to init WMM feature.
ACK Timeout	Set ACK timeout value. It shows current time in the end.

After changing the configuration setting, please click the "***Apply Changes"*** button to complete the new configuration setting. Otherwise, click the "***Reset"*** button to abort change and recover the previous configuration setting.

7.3 Security

This page allows you can configure security features of the wireless LAN interface. You can set the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength.
This device is equipped with 802.1X and WPA/WPA2 (Wi-Fi Protected Access), the latest security standard. It also supports the legacy security standard, WEP (Wired Equivalent Privacy). By default, wireless security is disabled and authentication is open. Before enabling the security, consider your network size, complexity, and existing authentication infrastructure and then determine which solution applies to it.



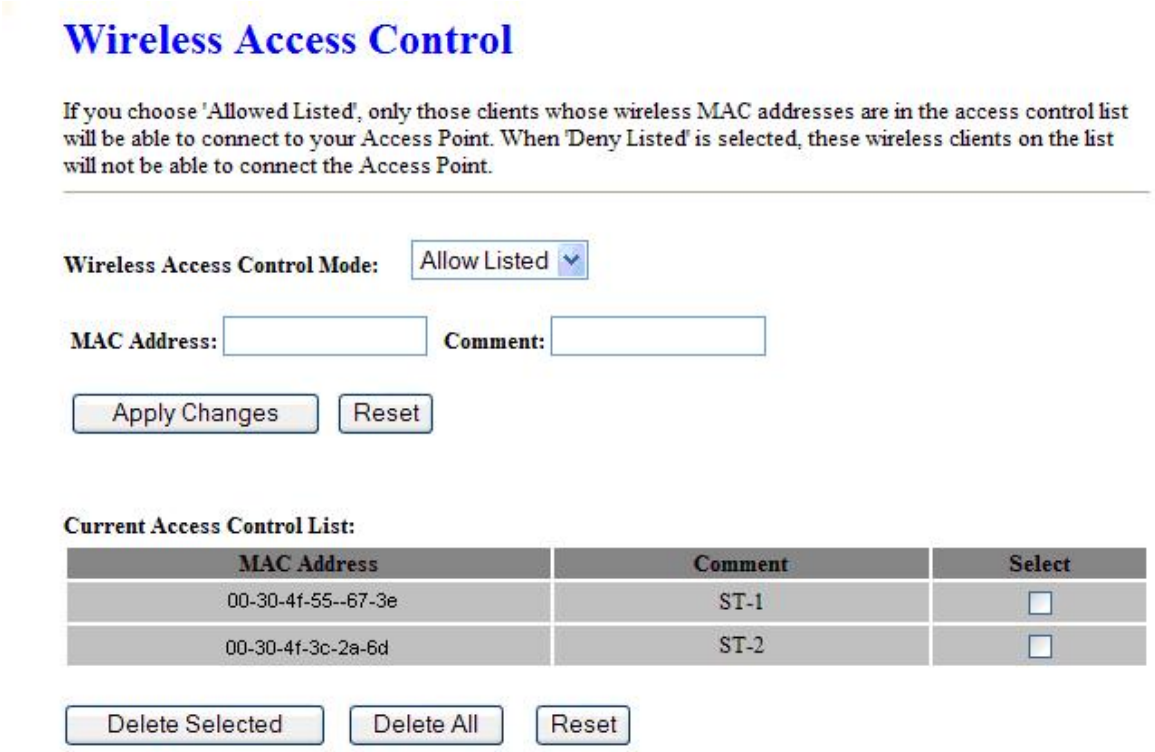
Parameter	Description
Encryption	Select the encryption supported over wireless access. The encryption method can be None, WEP, WPA(TKIP), WPA2 or WPA2 Mixed
Use 802.1x Authentication	While Encryption is selected to be WEP. Click the check box to enable IEEE 802.1x authentication function.

WPA Authentication Mode	While Encryption is selected to be WPA. Click to select the WPA Authentication Mode with Enterprise (RADIUS) or Personal (Pre-Shared Key).
Pre-Shared Key Format	While Encryption is selected to be WPA. Select the Pre-shared key format from the pull-down menu. The format can be Passphrase or Hex (64 characters). **[WPA, Personal (Pre-Shared Key) only]**
Pre-Shared Key	Fill in the key value. [WPA, Personal(Pre-Shared Key) only]
Enable Pre-Authentication	Click to enable Pre-Authentication. [WPA2/WPA2 Mixed only, Enterprise only]
Authentication RADIUS Server	Set the IP address, port and login password information of authentication RADIUS sever.

After changing the configuration setting, please click the "***Apply Changes"*** button to complete the new configuration setting. Otherwise, click the "***Reset"*** button to abort change and recover the previous configuration setting.

7.4 Access Control

If you enable wireless access control, only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When this option is enabled, no wireless clients will be able to connect if the list contains no entries.


Wireless Access Control
If you choose 'Allowed Listed', only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When 'Deny Listed' is selected, these wireless clients on the list will not be able to connect the Access Point.
Wireless Access Control Mode:
Allow Listed
MAC Address:
Comment:
Apply Changes
Reset
Current Access Control List:
MAC Address
Comment
Select
00-30-4f-55--67-3e
ST-1
00-30-4f-3c-2a-6d
ST-2
Delete Selected
Delete All
Reset

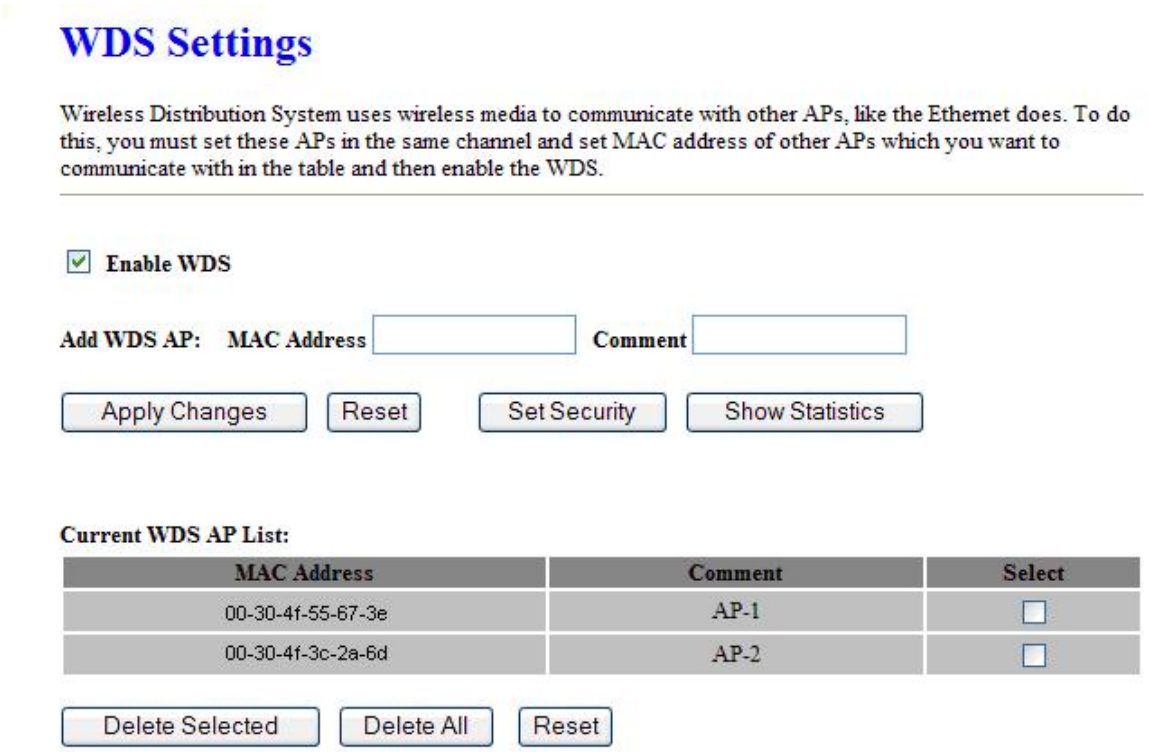
Parameter	Description
Wireless Access Control Mode	Click the ***Disabled***, ***Allow Listed*** or ***Deny Listed*** of drop down menu choose wireless access control mode. This is a security control function; only those clients registered in the access control list can link to this WLAN Broadband Router.
MAC Address	Fill in the MAC address of client to register this WLAN Broadband Router access capability.
Comment	Fill in the comment tag for the registered client.
Apply Changes	Click the ***Apply Changes*** button to register the client to new configuration setting.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Current Access Control List	It shows the registered clients that are allowed to link to this WLAN Broadband Router.

Delete Selected	Click to delete the selected clients that will be access right removed from this WLAN Broadband Router.
Delete All	Click to delete all the registered clients from the access allowed list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

7.5 WDS Settings

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.

The Wireless Distribution System (WDS) allows you to extend the range of your wireless network by introducing one or more WDS-enabled devices into your wireless network. You can only establish WDS links with WDS-enabled devices.


WDS Settings
Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.
Enable WDS
Add WDS AP: MAC Address
Comment
Apply Changes
Reset
Set Security
Show Statistics
Current WDS AP List:
MAC Address
Comment
Select
00-30-4f-55-67-3e
AP-1
00-30-4f-3c-2a-6d
AP-2
Delete Selected
Delete All
Reset

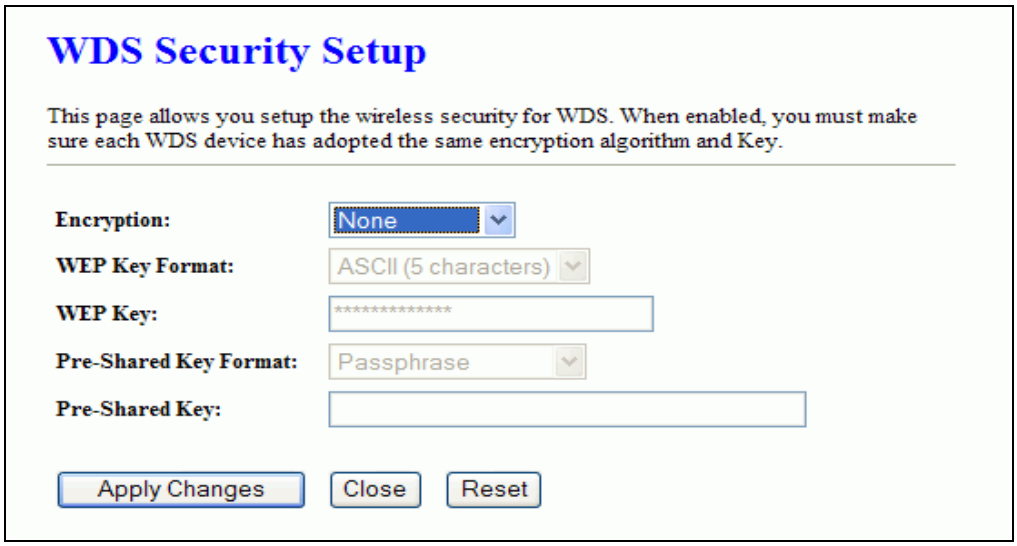
Parameter	Description
Enable WDS	Click the check box to enable wireless distribution system.
MAC Address	Fill in the MAC address of AP to register the wireless distribution system access capability.
Comment	Fill in the comment tag for the registered AP.
Apply Changes	Click the ***Apply Changes*** button to register the AP to new configuration setting.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Set Security	Click button to configure wireless security like: ***WEP(64bits), WEP(128bits), WPA(TKIP), WPA2(AES)*** or ***None.***

	The detail setting, please follow as below " **WDS Security Setup**"
Show Statistics	It shows the TX, RX packets, rate statistics
Delete Selected	Click to delete the selected clients that will be removed from the wireless distribution system.
Delete All	Click to delete all the registered APs from the wireless distribution system allowed list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

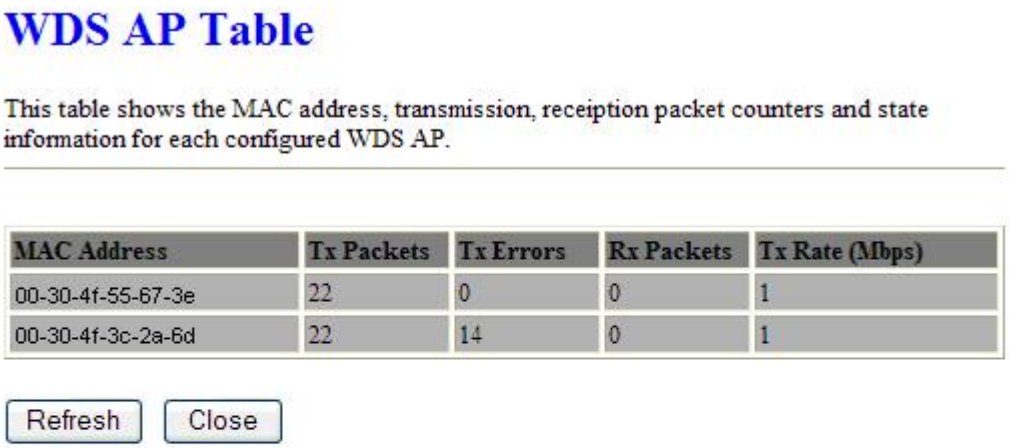
WDS Security Setup

Requirement: Set [Wireless]->[Basic Settings]->[Mode]->AP+WDS

This page is used to configure the wireless security between APs.



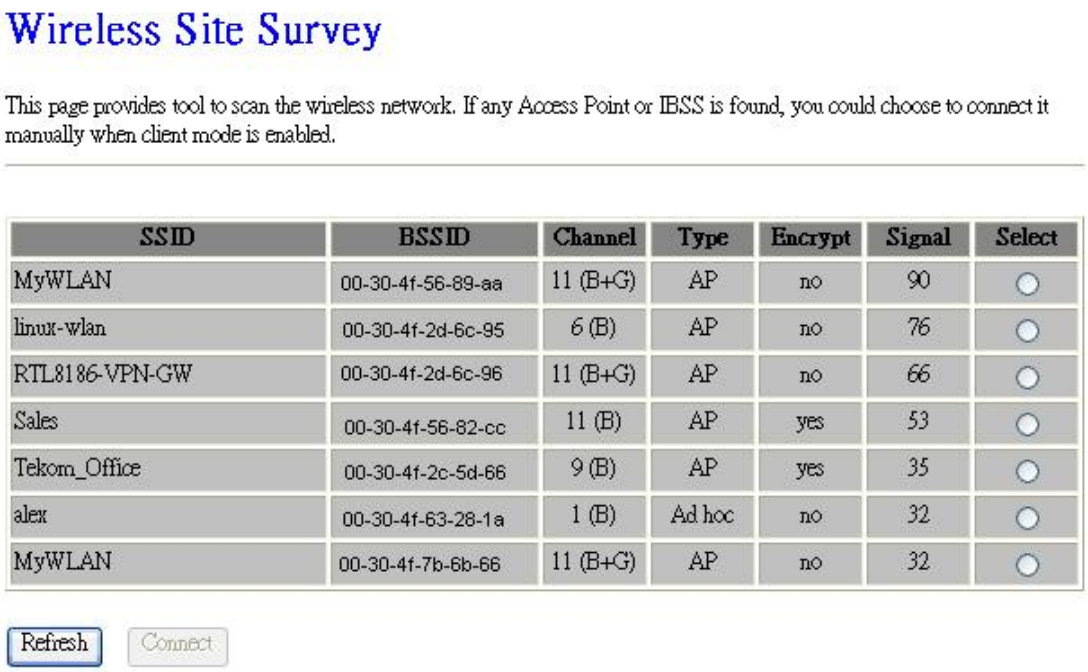
WDS AP Table, this page is used to show WDS statistics:



Parameter	Description
MAC Address	It shows the MAC Address within WDS.
Tx Packets	It shows the statistic count of sent packets on the wireless LAN interface.
Tx Errors	It shows the statistic count of error sent packets on the Wireless LAN interface.
Rx Packets	It shows the statistic count of received packets on the wireless LAN interface.
Tx Rate (Mbps)	It shows the wireless link rate within WDS.
Refresh	Click to refresh the statistic counters on the screen.
Close	Click to close the current window.

7.6 Site Survey

This page is used to view or configure other APs near yours.


Wireless Site Survey
This page provides tool to scan the wireless network. If any Access Point or IBSS is found, you could choose to connect it manually when client mode is enabled.
SSID BSSID Channel Type Encrypt Signal Select
MyWLAN 00-30-4f-56-89-aa 11 (B+G) AP no 90
linux-wlan 00-30-4f-2d-6c-95 6 (B) AP no 76
RTL8186-VPN-GW 00-30-4f-2d-6c-96 11 (B+G) AP no 66
Sales 00-30-4f-56-82-cc 11 (B) AP yes 53
Tekom_Office 00-30-4f-2c-5d-66 9 (B) AP yes 35
alex 00-30-4f-63-28-1a 1 (B) Ad hoc no 32
MyWLAN 00-30-4f-7b-6b-66 11 (B+G) AP no 32
Refresh
Connect

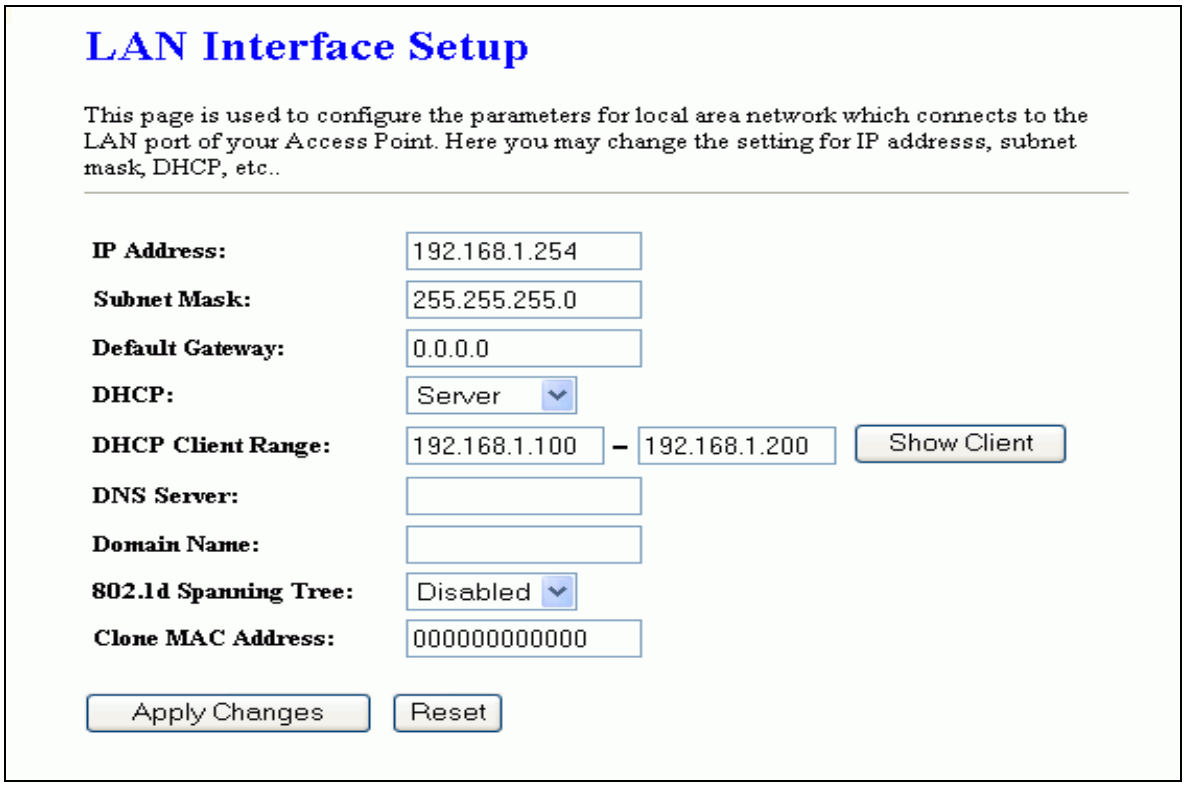
Parameter	Description
SSID	It shows the SSID of AP.
BSSID	It shows BSSID of AP.
Channel	It show the current channel of AP occupied.
Type	It show which type AP acts.
Encrypt	It shows the encryption status.
Signal	It shows the power level of current AP.
Select	Click to select AP or client you'd like to connect.
Refresh	Click the ***Refresh*** button to re-scan site survey on the screen.
Connect	Click the ***Connect*** button to establish connection.

Chapter 8 TCP/IP Settings

8.1 LAN Interface

There are the IP settings of the LAN Interface for the device. These settings may be referred to as Private settings. You may change the LAN IP address if needed. The LAN IP address is provided to your internal network and cannot be seen on the Internet.

You can change the LAN IP address for your requirements. The default LAN IP is 192.168.1.254. You can also enable the Secondary LAN IP function in this page. It will allow LAN Interface to have the alias IP for management.



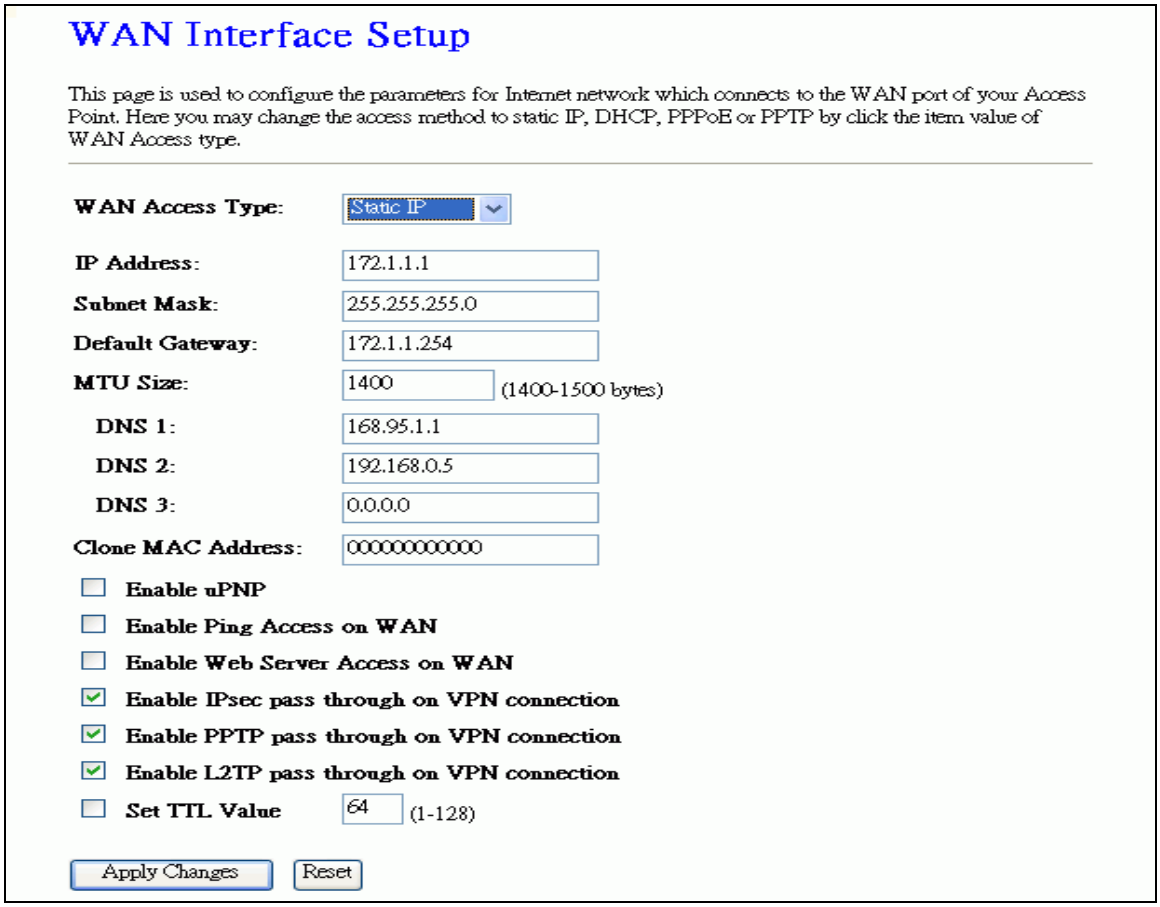
Parameter	Description
IP Address	Fill in the IP address of LAN interfaces of this WLAN Access Point.
Subnet Mask	Fill in the subnet mask of LAN interfaces of this WLAN Access Point.
Default Gateway	Fill in the default gateway for LAN interfaces out going data packets.

DHCP	Click to select ***Disabled***, ***Client*** or ***Server*** in different operation mode of wireless Access Point.
DHCP Client Range	Fill in the start IP address and end IP address to allocate a range of IP addresses; client with DHCP function set will be assigned an IP address from the range.
Show Client	Click to open the ***Active DHCP Client Table*** window that shows the active clients with their assigned IP address, MAC address and time expired information. **[Server mode only]**
DNS Server	Manual setup DNS server IP address.
Domain Name	Assign Domain Name and dispatch to DHCP clients. It is optional field.
802.1d Spanning Tree	Select to enable or disable the IEEE 802.1d Spanning Tree function from pull-down menu.
Clone MAC Address	Fill in the MAC address that is the MAC address to be cloned.
Apply Changes	Click the ***Apply Changes*** button to complete the new configuration setting.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

8.2 WAN Interface

This page is used to configure the parameters for wide area network that connects to the WAN port of your WLAN Broadband Router. Here you may change the access method to **Static IP**, **DHCP**, **PPPoE** or **PPTP** by click the item value of WAN Access Type.

Static IP

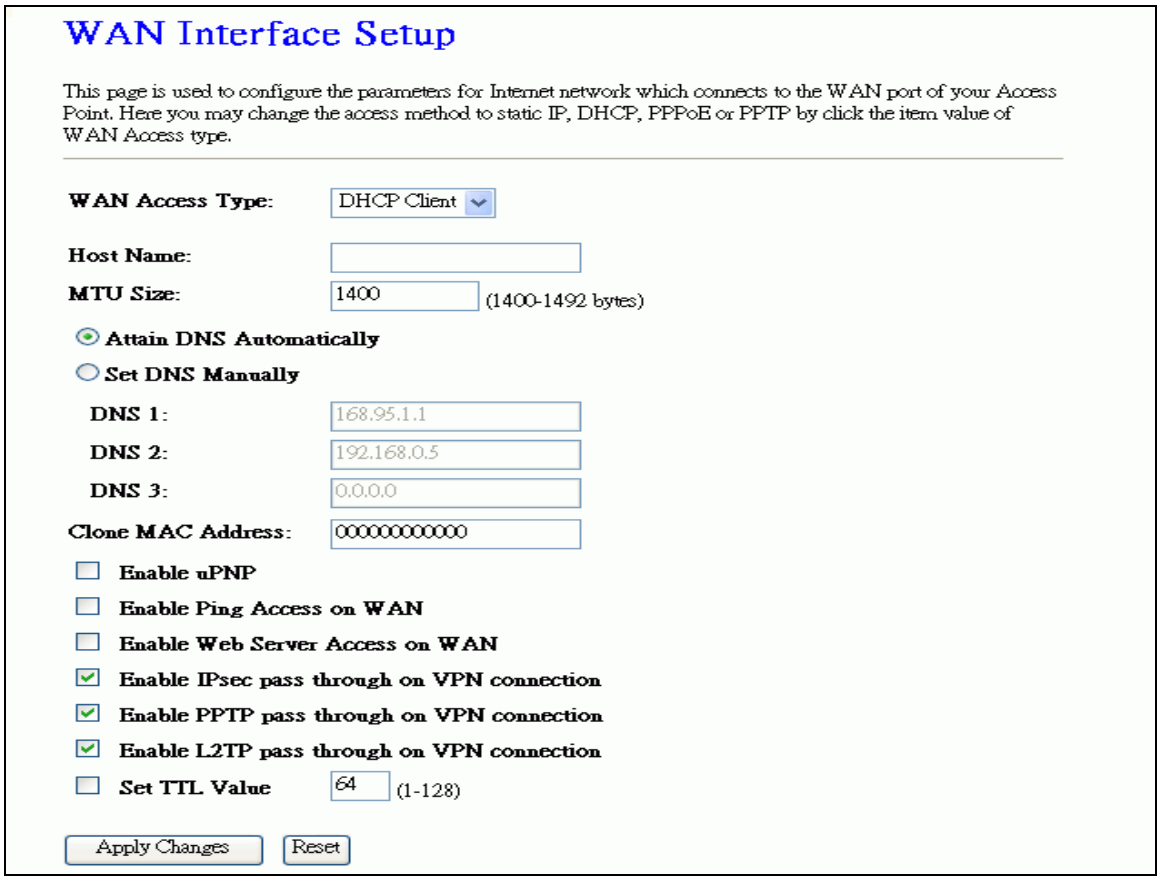


Parameter	Description
Static IP	Click to select Static IP support on WAN interface. There are IP address, subnet mask and default gateway settings need to be done.
IP Address	If you select the Static IP support on WAN interface, fill in the IP address for it.
Subnet Mask	If you select the Static IP support on WAN interface, fill in the subnet mask for it.
Default Gateway	If you select the Static IP support on WAN interface, fill in the default gateway for WAN interface out going data packets.

MTU Size	Fill in the MTU Size. The default value is 1400
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.
Clone MAC Address	Fill in the MAC address that is the MAC address to be cloned.
Enable uPNP	Click the checkbox to enable uPNP function.
Enable Web Server Access on WAN	Click the checkbox to enable web configuration from WAN side.
Enable WAN Echo Reply	Click the checkbox to enable WAN ICMP response.
Enable IPsec pass through on VPN connection	Click the checkbox to enable IPSec packet pass through
Enable PPTP pass through on VPN connection	Click the checkbox to enable PPTP packet pass through
Enable L2TP pass through on VPN connection	Click the checkbox to enable L2TP packet pass through
Set TTL value	Click to Enable and set Time to Live value.

After changing the configuration setting, please click the "***Apply Changes"*** button to complete the new configuration setting. Otherwise, click the "***Reset"*** button to abort change and recover the previous configuration setting.

DHCP Client

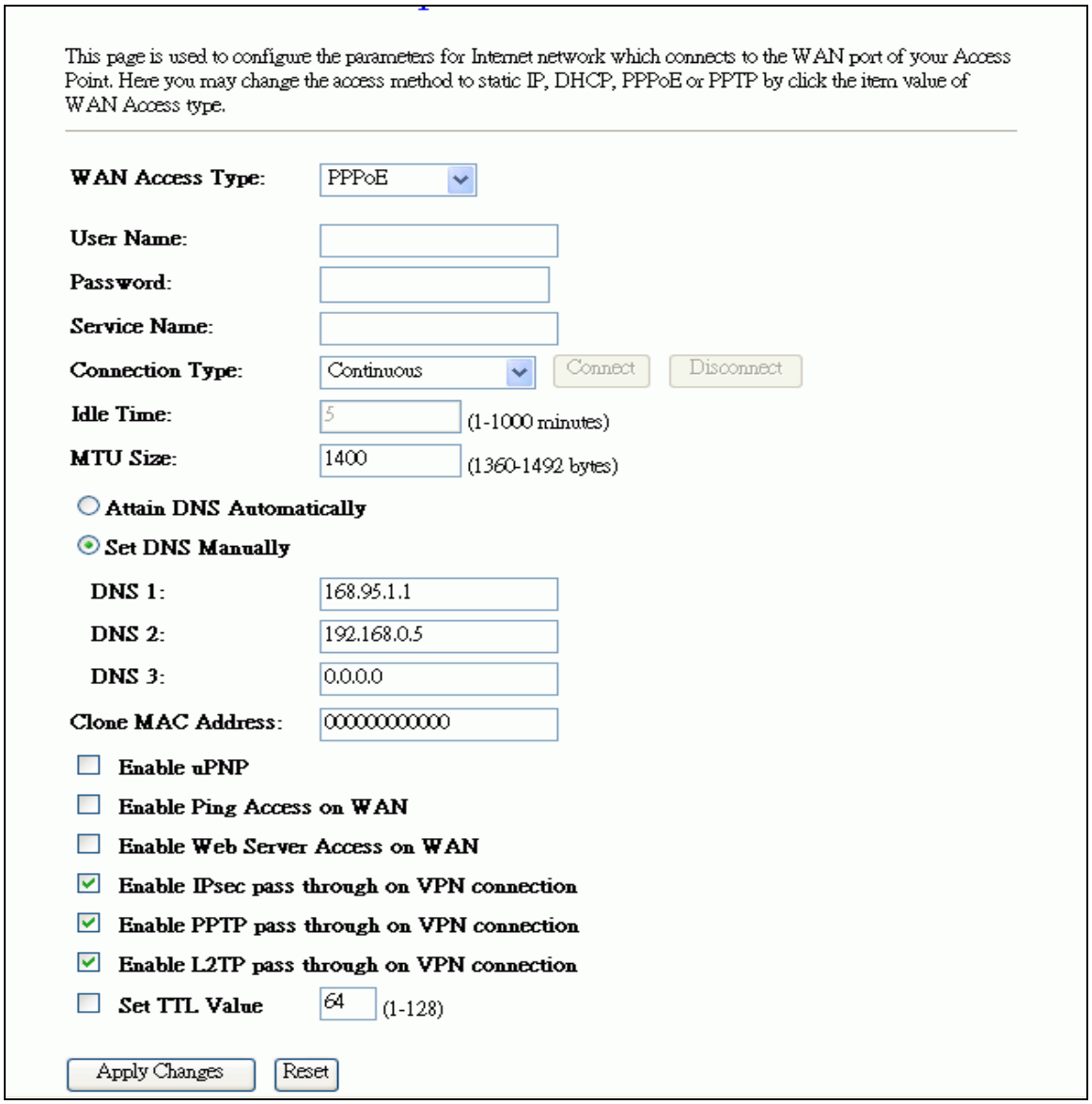

WAN Interface Setup
This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type.
WAN Access Type:
DHCP Client
Host Name:
MTU Size:
1400
(1400-1492 bytes)
Attain DNS Automatically
Set DNS Manually
DNS 1:
168.95.1.1
DNS 2:
192.168.0.5
DNS 3:
0.0.0.0
Clone MAC Address:
000000000000
Enable uPNP
Enable Ping Access on WAN
Enable Web Server Access on WAN
Enable IPsec pass through on VPN connection
Enable PPTP pass through on VPN connection
Enable L2TP pass through on VPN connection
Set TTL Value
64
(1-128)
Apply Changes
Reset

Parameter	Description
DHCP Client	Click to select DHCP support on WAN interface for IP address assigned automatically from a DHCP server.
Host Name	Fill in the host name of Host Name. The default value is empty
MTU Size	Fill in the mtu size of MTU Size. The default value is 1400
Attain DNS Automatically	Click to select getting DNS address for ***DHCP*** support. Please select ***Set DNS Manually*** if the ***DHCP*** support is selected.
Set DNS Manually	Click to select getting DNS address for ***DHCP*** support.
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.
Clone MAC Address	Fill in the MAC address that is the MAC address to be cloned.
Enable uPNP	Click the checkbox to enable uPNP function.
Enable Web Server Access on WAN	Click the checkbox to enable web configuration from WAN side.
Enable WAN Echo Reply	Click the checkbox to enable WAN ICMP response.
Enable IPsec pass through on VPN connection	Click the checkbox to enable IPSec packet pass through

Enable PPTP pass through on VPN connection	Click the checkbox to enable PPTP packet pass through
Enable L2TP pass through on VPN connection	Click the checkbox to enable L2TP packet pass through
Set TTL value	Click to Enable and set Time to Live value.

After changing the configuration setting, please click the "***Apply Changes"*** button to complete the new configuration setting. Otherwise, click the "***Reset"*** button to abort change and recover the previous configuration setting.

PPPoE

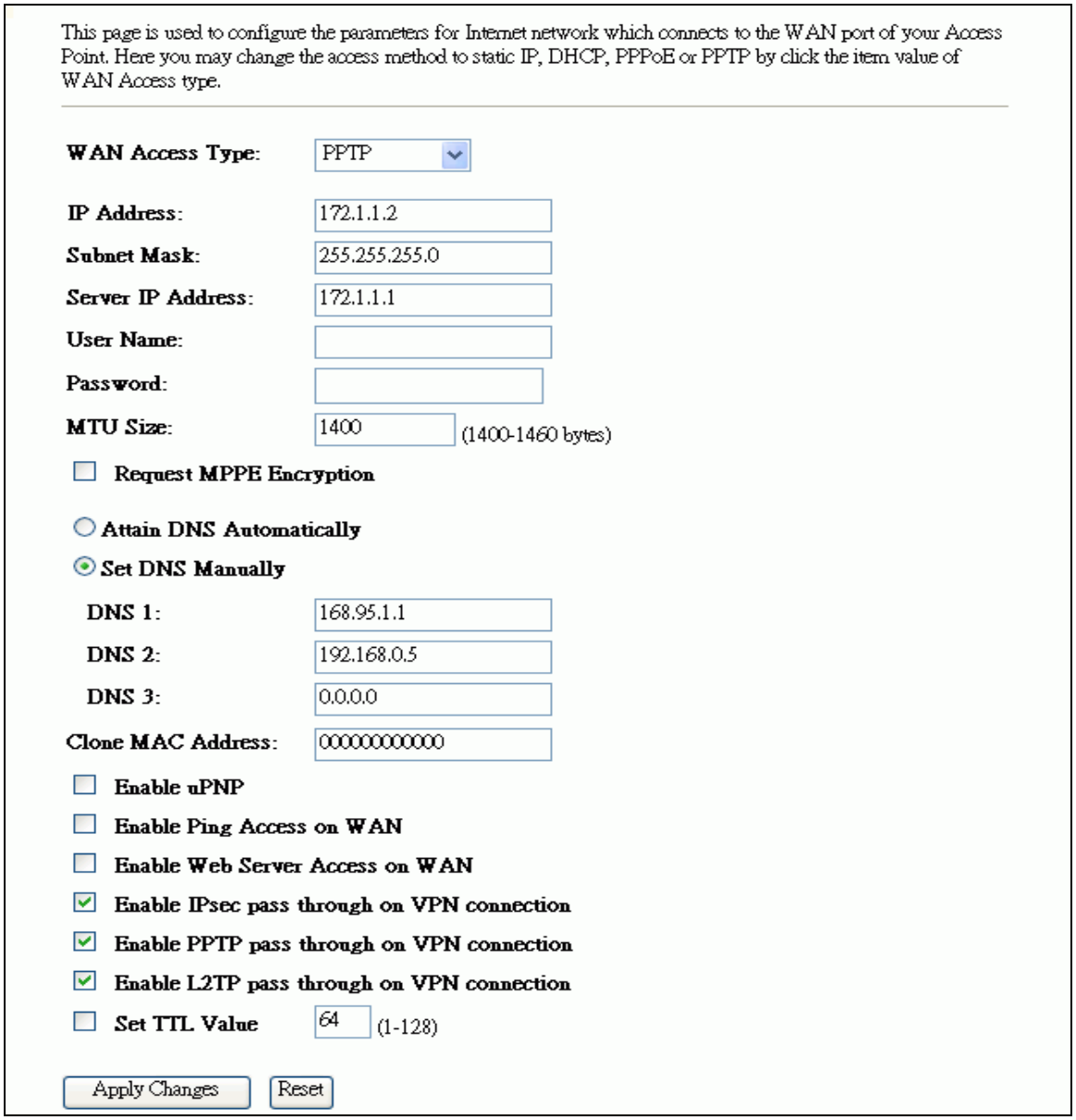

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type.
WAN Access Type: PPPoE
User Name:
Password:
Service Name:
Connection Type: Continuous Connect Disconnect
Idle Time: 5 (1-1000 minutes)
MTU Size: 1400 (1360-1492 bytes)
Attain DNS Automatically
Set DNS Manually
DNS 1: 168.95.1.1
DNS 2: 192.168.0.5
DNS 3: 0.0.0.0
Clone MAC Address: 000000000000
Enable uPNP
Enable Ping Access on WAN
Enable Web Server Access on WAN
Enable IPsec pass through on VPN connection
Enable PPTP pass through on VPN connection
Enable L2TP pass through on VPN connection
Set TTL Value 64 (1-128)
Apply Changes
Reset

Parameter	Description
PPPoE	Click to select PPPoE support on WAN interface. There are user name, password, connection type and idle time settings need to be done.
User Name	If you select the PPPoE support on WAN interface, fill in the user name and password to login the PPPoE server.
Password	If you select the PPPoE support on WAN interface, fill in the user name and password to login the PPPoE server.
Service Name	Fill in the service name of Service Name. The default value is empty.
Connection Type	Select the connection type from pull-down menu. There are ***Continuous***, ***Connect on Demand*** and ***Manual*** three types to select. ***Continuous*** connection type means to setup the connection through PPPoE protocol whenever this WLAN Broadband Router is powered on. ***Connect on Demand*** connection type means to setup the connection through PPPoE protocol whenever you send the data packets out through the WAN interface; there are a watchdog implemented to close the PPPoE connection while there are no data sent out longer than the idle time set. ***Manual*** connection type means to setup the connection through the PPPoE protocol by clicking the ***Connect*** button manually, and clicking the ***Disconnect*** button manually.
Idle Time	If you select the ***PPPoE*** and ***Connect on Demand*** connection type, fill in the idle time for auto-disconnect function. Value can be between 1 and 1000 minutes.
MTU Size	Fill in the mtu size of MTU Size. The default value is 1400.
Attain DNS Automatically	Click to select getting DNS address for ***PPPoE*** support. Please select ***Set DNS Manually*** if the ***PPPoE*** support is selected.
Set DNS Manually	Click to select getting DNS address for ***Static IP*** support.
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.
Clone MAC Address	Fill in the MAC address that is the MAC address to be cloned.
Enable uPNP	Click the checkbox to enable uPNP function.
Enable Web Server Access on WAN	Click the checkbox to enable web configuration from WAN side.
Enable WAN Echo Reply	Click the checkbox to enable WAN ICMP response.
Enable IPsec pass through on VPN connection	Click the checkbox to enable IPSec packet pass through

Enable PPTP pass through on VPN connection	Click the checkbox to enable PPTP packet pass through
Enable L2TP pass through on VPN connection	Click the checkbox to enable L2TP packet pass through
Set TTL value	Click to Enable and set Time to Live value.

After changing the configuration setting, please click the "***Apply Changes"*** button to complete the new configuration setting. Otherwise, click the "***Reset"*** button to abort change and recover the previous configuration setting.

PPTP


This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type.
WAN Access Type: PPTP
IP Address: 172.1.1.2
Subnet Mask: 255.255.255.0
Server IP Address: 172.1.1.1
User Name:
Password:
MTU Size: 1400 (1400-1460 bytes)
Request MPPE Encryption
Attain DNS Automatically
Set DNS Manually
DNS 1: 168.95.1.1
DNS 2: 192.168.0.5
DNS 3: 0.0.0.0
Clone MAC Address: 000000000000
Enable uPNP
Enable Ping Access on WAN
Enable Web Server Access on WAN
Enable IPsec pass through on VPN connection
Enable PPTP pass through on VPN connection
Enable L2TP pass through on VPN connection
Set TTL Value 64 (1-128)
Apply Changes
Reset

Parameter	Description
PPTP	Allow user to make a tunnel with remote site directly to secure the data transmission among the connection. User can use embedded PPTP client supported by this router to make a VPN connection.
IP Address	If you select the PPTP support on WAN interface, fill in the IP address for it.
Subnet Mask	If you select the PPTP support on WAN interface, fill in the subnet mask for it.
Server IP Address	Enter the IP address of the PPTP Server.
User Name	If you select the PPTP support on WAN interface, fill in the user name and password to login the PPTP server.
Password	f you select the PPTP support on WAN interface, fill in the user name and password to login the PPTP server.
MTU Size	Fill in the mtu size of MTU Size. The default value is 1400.
Request MPPE Encryption	Click the checkbox to enable request MPPE encryption.
Attain DNS Automatically	Click to select getting DNS address for ***PPTP*** support. Please select ***Set DNS Manually*** if the ***PPTP*** support is selected.
Set DNS Manually	Click to select getting DNS address for ***PPTP*** support.
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.
Clone MAC Address	Fill in the MAC address that is the MAC address to be cloned.
Enable uPNP	Click the checkbox to enable uPNP function.
Enable Web Server Access on WAN	Click the checkbox to enable web configuration from WAN side.
Enable WAN Echo Reply	Click the checkbox to enable WAN ICMP response.
Set TTL value	Click to Enable and set Time to Live value.
Enable uPNP	Click the checkbox to enable uPNP function.
Enable Web Server Access on WAN	Click the checkbox to enable web configuration from WAN side.
Enable WAN Echo Reply	Click the checkbox to enable WAN ICMP response.
Enable IPsec pass through on VPN connection	Click the checkbox to enable IPSec packet pass through
Enable PPTP pass through on VPN connection	Click the checkbox to enable PPTP packet pass through
Enable L2TP pass through on VPN connection	Click the checkbox to enable L2TP packet pass through
Set TTL value	Click to Enable and set Time to Live value.

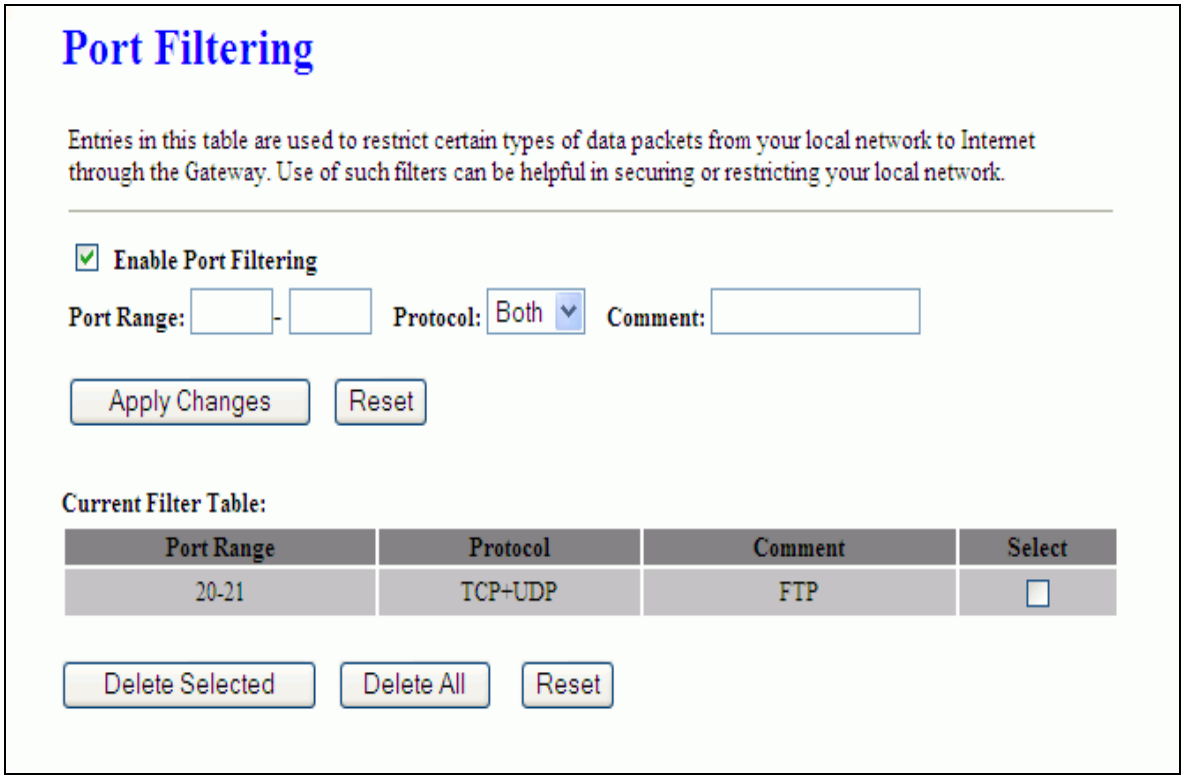
After changing the configuration setting, please click the “***Apply Changes”*** button to complete the new configuration setting. Otherwise, click the “***Reset”*** button to abort change and recover the previous configuration setting.

Chapter 9 Firewall

Firewall is an advance feature used to deny or allow traffic from passing through the device. WAP-6200 supports some firewall related functions. It includes the Port/IP Filter, MAC, URL Filtering and Port Forwarding, DMZ functions.

9.1 Port Filtering

Use the Port Filtering to restrict particular Ports from accessing the Internet. You can assign Port Range and choose Protocol to configure.

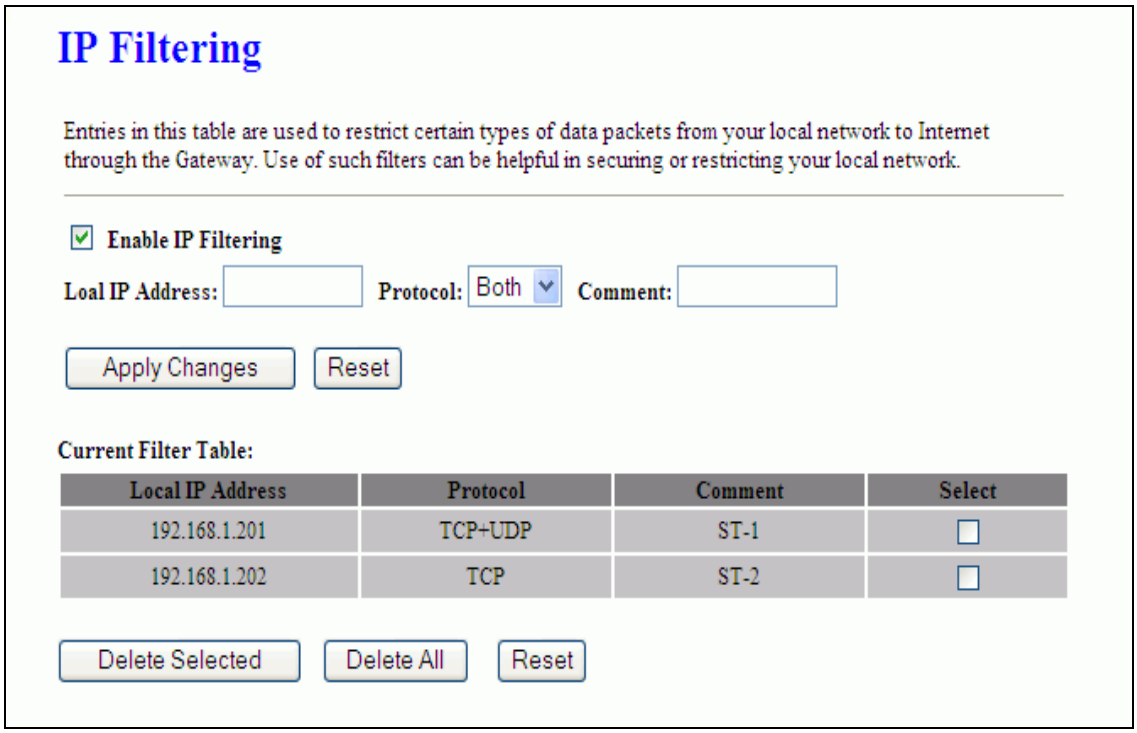


Parameter	Description
Enable Port Filtering	Click to enable the port filtering security function.
Port Range Protocol Comment	To restrict data transmission from the local network on certain ports, fill in the range of start-port and end-port, and the protocol, also put your comments on it. The ***Protocol*** can be TCP, UDP or Both. ***Comments*** let you know about whys to restrict data from the ports.

Apply Changes	Click the ***Apply Changes*** button to register the ports to port filtering list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Delete Selected	Click to delete the selected port range that will be removed from the port-filtering list.
Delete All	Click to delete all the registered entries from the port-filtering list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

9.2 IP Filtering

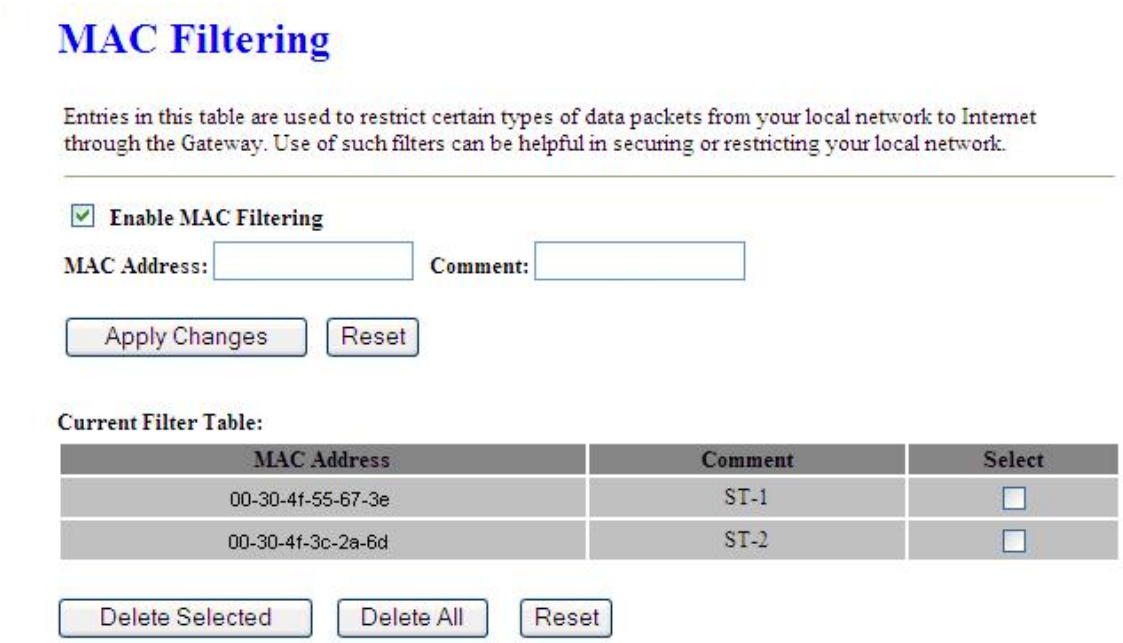
Use the IP Filtering to restrict particular LAN IP addresses from accessing the Internet. You can assign the specific IP address and choose Protocol to configure.



Parameter	Description
Enable IP Filtering	Click to enable the IP filtering security function.
Local IP Address Protocol Comment	To restrict data transmission from local network on certain IP addresses, fill in the IP address and the protocol, also put your comments on it. The ***Protocol*** can be TCP, UDP or Both. ***Comments*** let you know about whys to restrict data from the IP address.
Apply Changes	Click the ***Apply Changes*** button to register the IP address to IP filtering list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Delete Selected	Click to delete the selected IP address that will be removed from the IP-filtering list.
Delete All	Click to delete all the registered entries from the IP-filtering list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

9.3 MAC Filtering

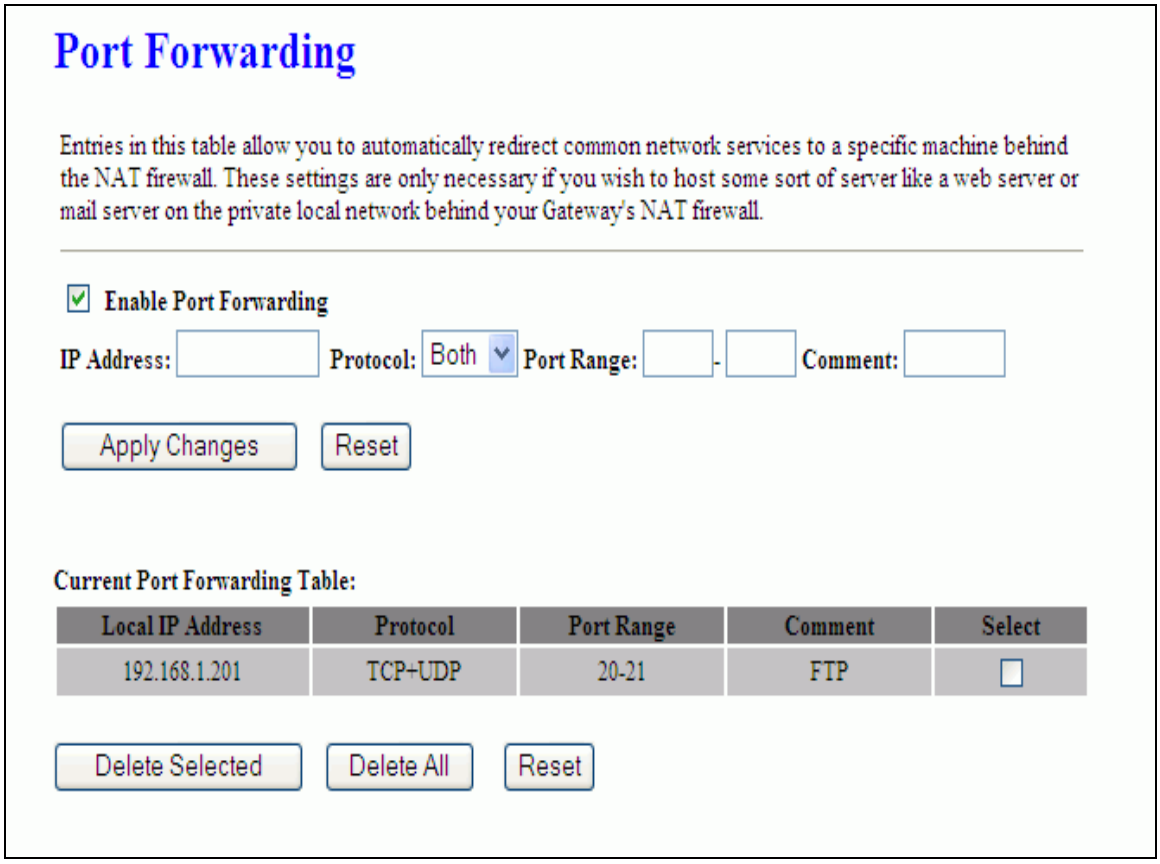
Use the MAC filtering to deny computers within the local area network from accessing the Internet and helpful in securing or restricting your local network.



Parameter	Description
Enable MAC Filtering	Click to enable the MAC filtering security function.
MAC Address Comments	To restrict data transmission from local network on certain MAC addresses, fill in the MAC address and your comments on it. ***Comments*** let you know about whys to restrict data from the MAC address.
Apply Changes	Click the ***Apply Changes*** button to register the MAC address to MAC filtering list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Delete Selected	Click to delete the selected MAC address that will be removed from the MAC-filtering list.
Delete All	Click to delete all the registered entries from the MAC-filtering list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

9.4 Port Forwarding

This table allows you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall.

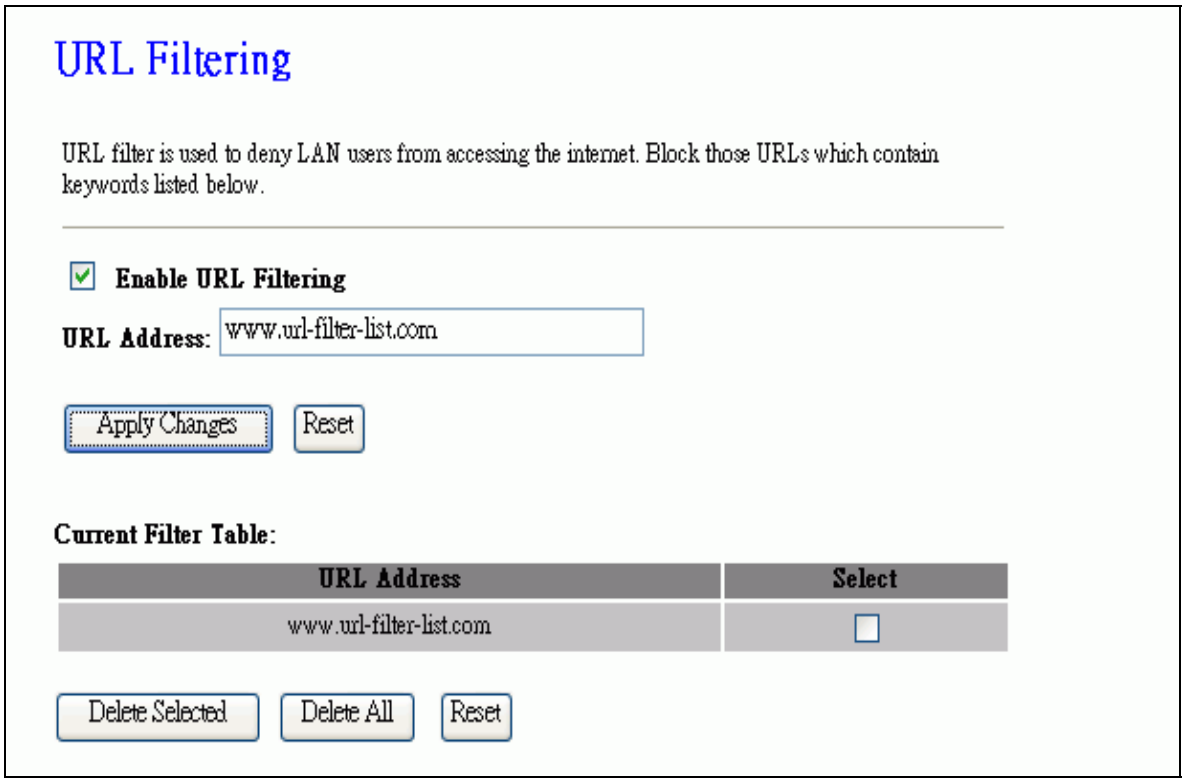


Parameter	Description
Enable Port Forwarding	Click to enable the Port Forwarding security function.
IP Address Protocol Port Range Comment	To forward data packets coming from WAN to a specific IP address that hosted in local network behind the NAT firewall, fill in the IP address, protocol, port range and your comments. The Protocol can be TCP, UDP or Both. The Port Range for data transmission. Comments let you know about whys to allow data packets forward to the IP address and port number.
Apply Changes	Click the ***Apply Changes*** button to register the IP address and port number to Port forwarding list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

Delete Selected	Click to delete the selected IP address and port number that will be removed from the port-forwarding list.
Delete All	Click to delete all the registered entries from the port-forwarding list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

9.5 URL Filtering

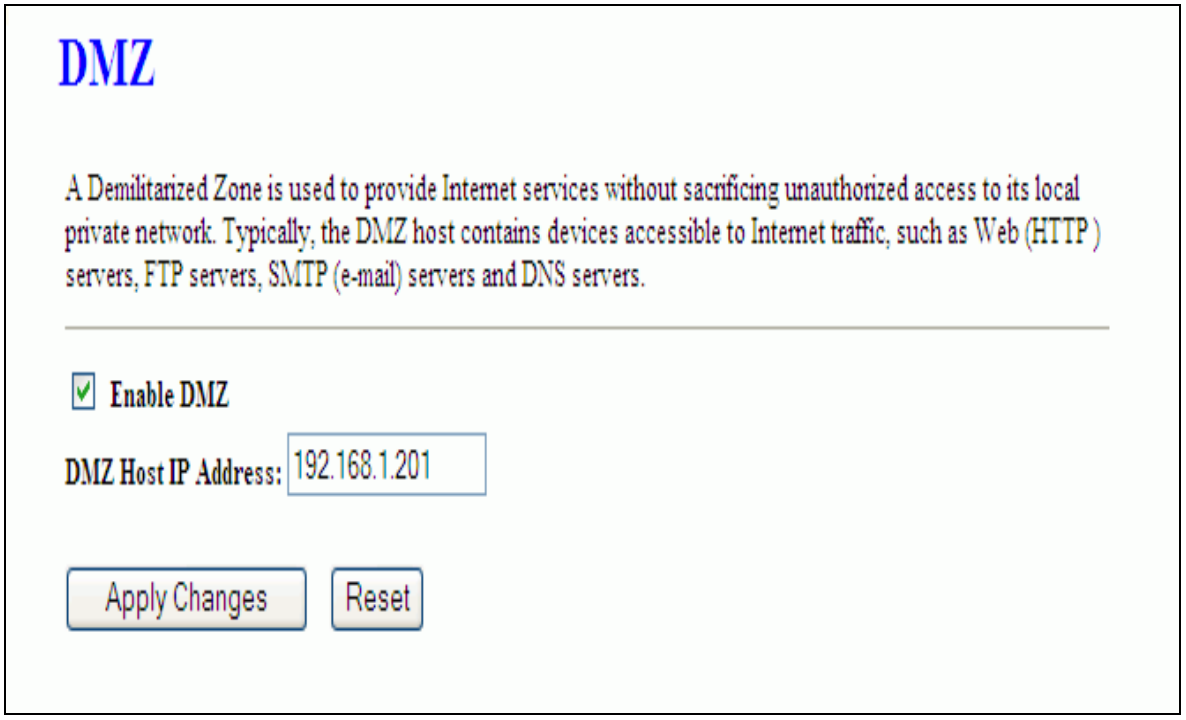
This page is used to configure the Blocked FQDN (Such as tw.yahoo.com) and filtered keyword. Here you can add / delete FQDN and filtered keyword.



Parameter	Description
Enable URL Filtering	Click to enable the URL Filtering function.
URL Address	Add one URL address.
Apply Changes	Click the ***Apply Changes*** button to save settings.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Delete Selected	Click to delete the selected URL address that will be removed from the URL Filtering list.
Delete All	Click to delete all the registered entries from the URL Filtering list.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

9.6 DMZ

A **DMZ (Demilitarized Zone)** allows a single computer on your LAN to expose ALL of its ports to the Internet. Enter the IP address of that computer as a DMZ (Demilitarized Zone) host with unrestricted Internet access. When doing this, the DMZ host is no longer behind the firewall.

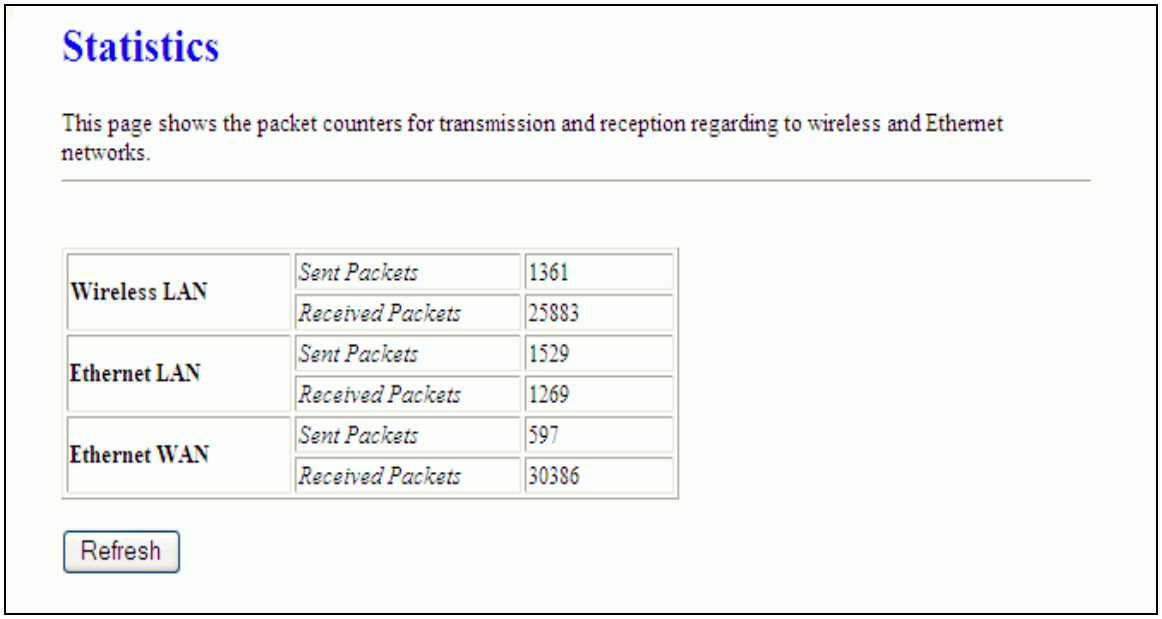

DMZ
A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.
Enable DMZ
DMZ Host IP Address: 192.168.1.201
Apply Changes
Reset

Parameter	Description
Enable DMZ	Click to enable the DMZ function.
DMZ Host IP Address	To support DMZ in your firewall design, fill in the IP address of DMZ host that can be access from the WAN interface.
Apply Changes	Click the ***Apply Changes*** button to register the IP address of DMZ host.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

Chapter 10 Management

10.1 Statistics

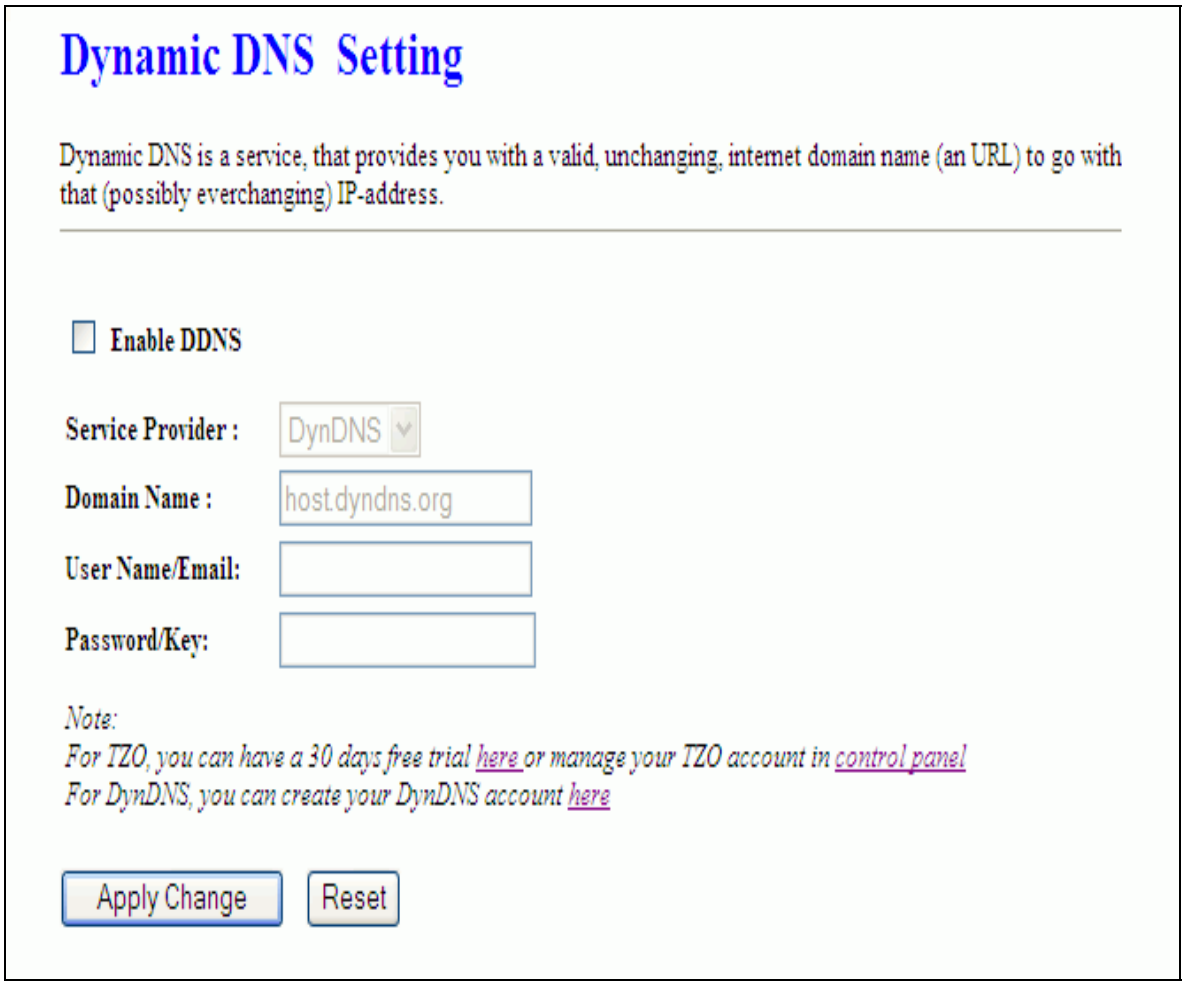
This page shows the packet counters for transmission and reception regarding to wireless, Ethernet LAN and Ethernet WAN networks.



Item	Description
Wireless LAN ***Sent Packets***	It shows the statistic count of sent packets on the wireless LAN interface.
Wireless LAN ***Received Packets***	It shows the statistic count of received packets on the wireless LAN interface.
Ethernet LAN ***Sent Packets***	It shows the statistic count of sent packets on the Ethernet LAN interface.
Ethernet LAN ***Received Packets***	It shows the statistic count of received packets on the Ethernet LAN interface.
Ethernet WAN ***Sent Packets***	It shows the statistic count of sent packets on the Ethernet WAN interface.
Ethernet WAN ***Received Packets***	It shows the statistic count of received packets on the Ethernet WAN interface.
Refresh	Click the refresh the statistic counters on the screen.

10.2 DDNS

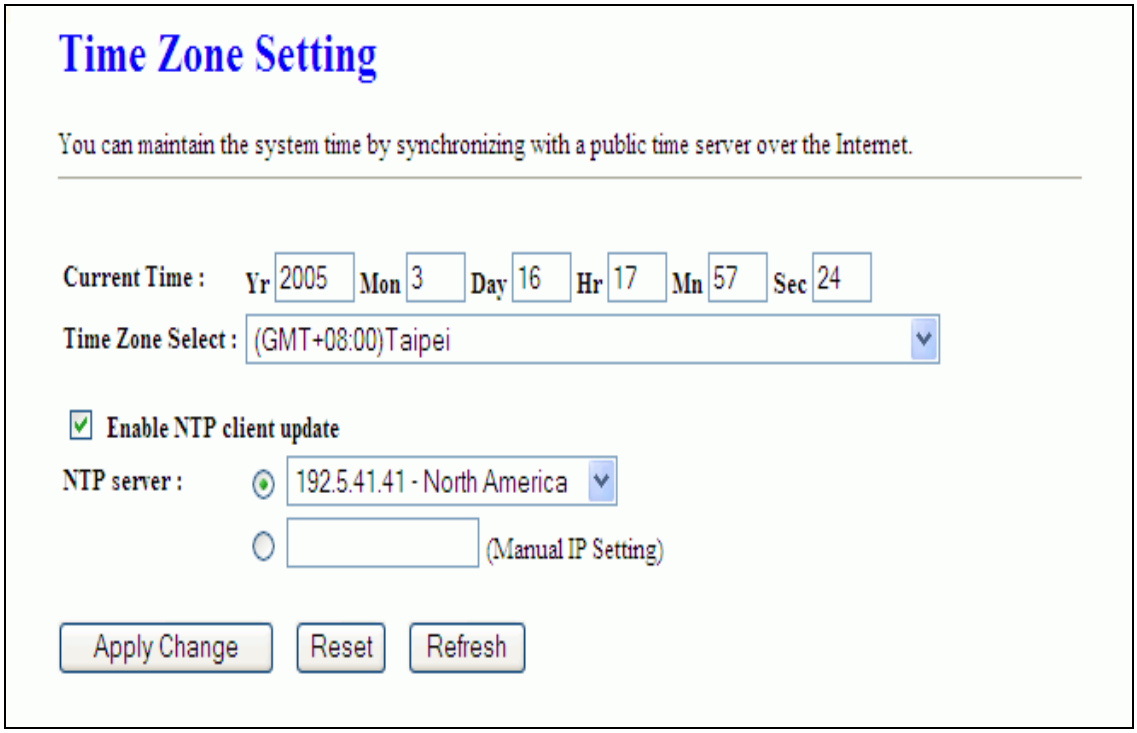
This page is used to configure Dynamic DNS service to have DNS with dynamic IP address.


Dynamic DNS Setting
Dynamic DNS is a service, that provides you with a valid, unchanging, internet domain name (an URL) to go with that (possibly everchanging) IP-address.
Enable DDNS
Service Provider :
DynDNS
Domain Name :
host.dyndns.org
User Name/Email:
Password/Key:
Note:
For TZO, you can have a 30 days free trial here or manage your TZO account in control panel
For DynDNS, you can create your DynDNS account here
Apply Change
Reset

Parameter	Description
Enable DDNS	Click the checkbox to enable ***DDNS*** service.
Service Provider	Click the drop down menu to pickup the right provider.
Domain Name	To configure the Domain Name.
User Name/Email	Configure User Name, Email.
Password/Key	Configure Password, Key.
Apply Change	Click the ***Apply Changes*** button to save the enable DDNS service.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

10.3 Time Zone Setting

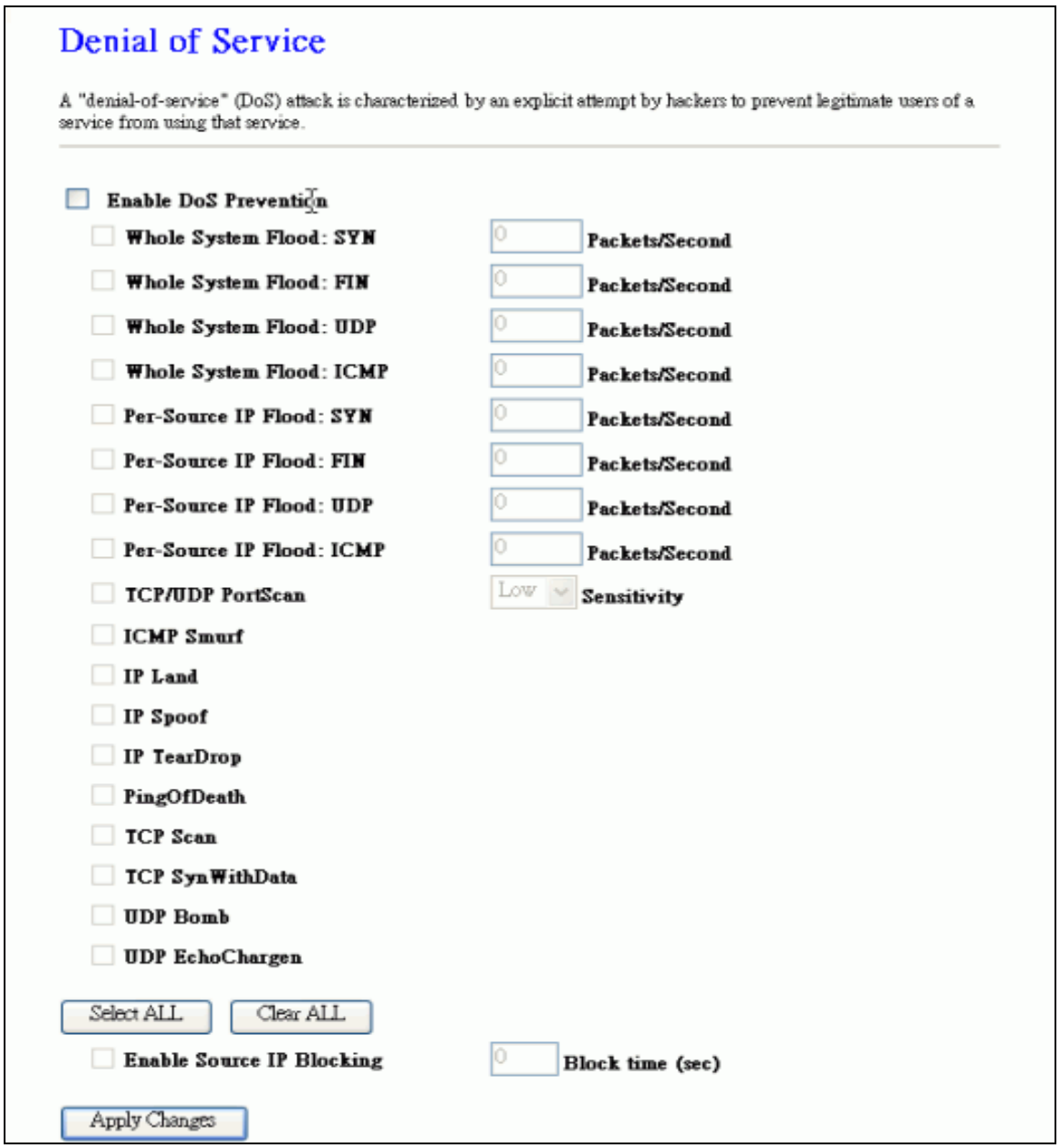
This page is used to configure NTP client to get current time.


Time Zone Setting
You can maintain the system time by synchronizing with a public time server over the Internet.
Current Time : Yr 2005 Mon 3 Day 16 Hr 17 Mn 57 Sec 24
Time Zone Select : (GMT+08:00)Taipei
Enable NTP client update
NTP server : 192.5.41.41 - North America
(Manual IP Setting)
Apply Change
Reset
Refresh

Parameter	Description
Current Time	It shows the current time.
Time Zone Select	Click the time zone in your country.
Enable NTP client update	Click the checkbox to enable NTP client update.
NTP Server	Click select default or input NTP server IP address.
Apply Change	Click the ***Apply Changes*** button to save and enable NTP client service.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Refresh	Click the refresh the current time shown on the screen.

10.4 Denial-of-Service

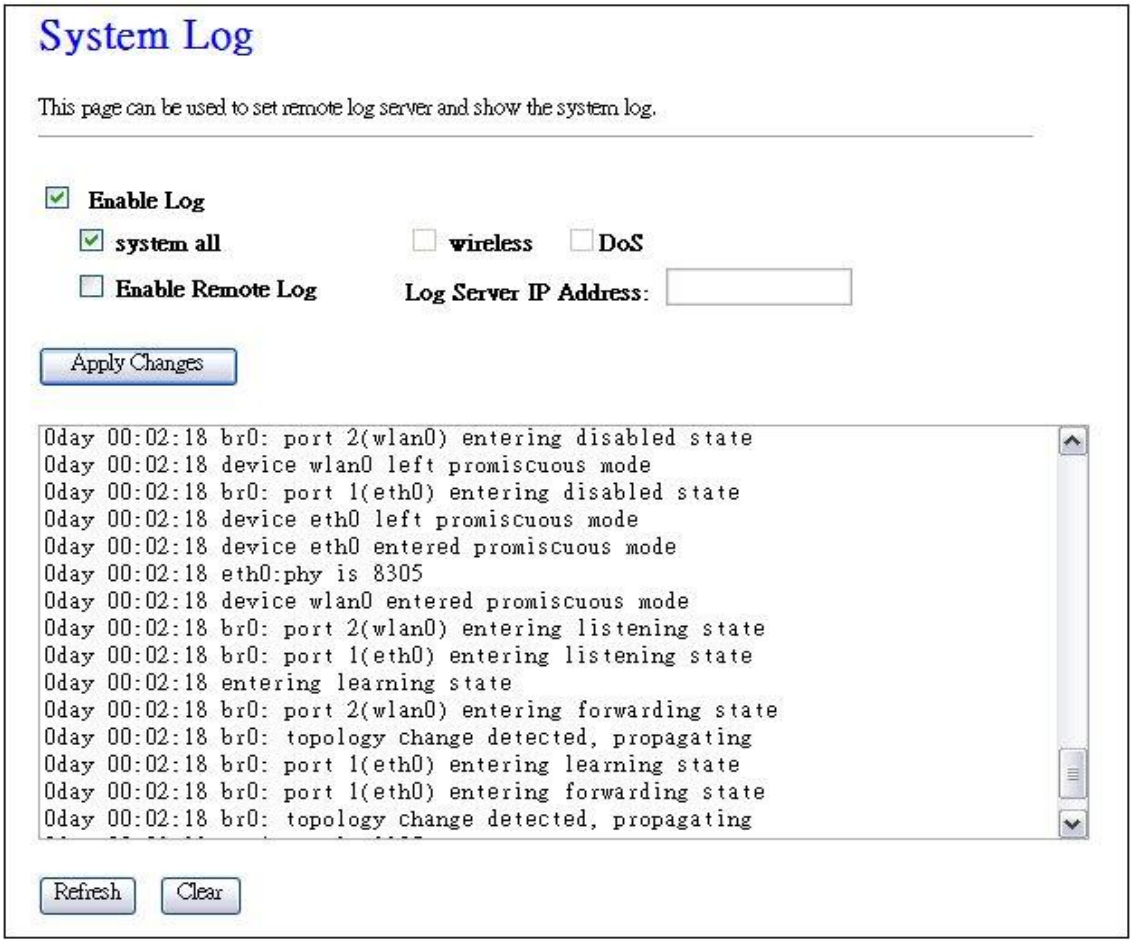
This page is used to enable and setup protection to prevent attack by hacker's program. It provides more security for users.



Parameter	Description
Enable DoS Prevention	Click the checkbox to enable DoS prevention.
Whole System Flood / Per-Source IP Flood…	Enable and setup prevention in details.
Select ALL	Click the checkbox to enable all prevention items.
Clear ALL	Click the checkbox to disable all prevention items.
Apply Changes	Click the ***Apply Changes*** button to save above settings.

10.5 Log

This page is used to configure the remote log server and shown the current log.


System Log
This page can be used to set remote log server and show the system log.
Enable Log
system all
wireless
DoS
Enable Remote Log
Log Server IP Address:
Apply Changes
0day 00:02:18 br0: port 2(wlan0) entering disabled state
0day 00:02:18 device wlan0 left promiscuous mode
0day 00:02:18 br0: port 1(eth0) entering disabled state
0day 00:02:18 device eth0 left promiscuous mode
0day 00:02:18 device eth0 entered promiscuous mode
0day 00:02:18 eth0:phy is 8305
0day 00:02:18 device wlan0 entered promiscuous mode
0day 00:02:18 br0: port 2(wlan0) entering listening state
0day 00:02:18 br0: port 1(eth0) entering listening state
0day 00:02:18 entering learning state
0day 00:02:18 br0: port 2(wlan0) entering forwarding state
0day 00:02:18 br0: topology change detected, propagating
0day 00:02:18 br0: port 1(eth0) entering learning state
0day 00:02:18 br0: port 1(eth0) entering forwarding state
0day 00:02:18 br0: topology change detected, propagating
Refresh
Clear

Parameter	Description
Enable Log	Click the checkbox to enable log.
System all	Show all log of wireless broadband router
Wirelessy	Only show wireless log
DoS	Only show Denial-of-Service log
Enable Remote Log	Click the checkbox to enable remote log service.
Log Server IP Address	Input the remote log IP address
Apply Changes	Click the ***Apply Changes*** button to save above settings.
Refresh	Click the refresh the log shown on the screen.
Clear	Clear log display screen

10.6 Upgrade firmware

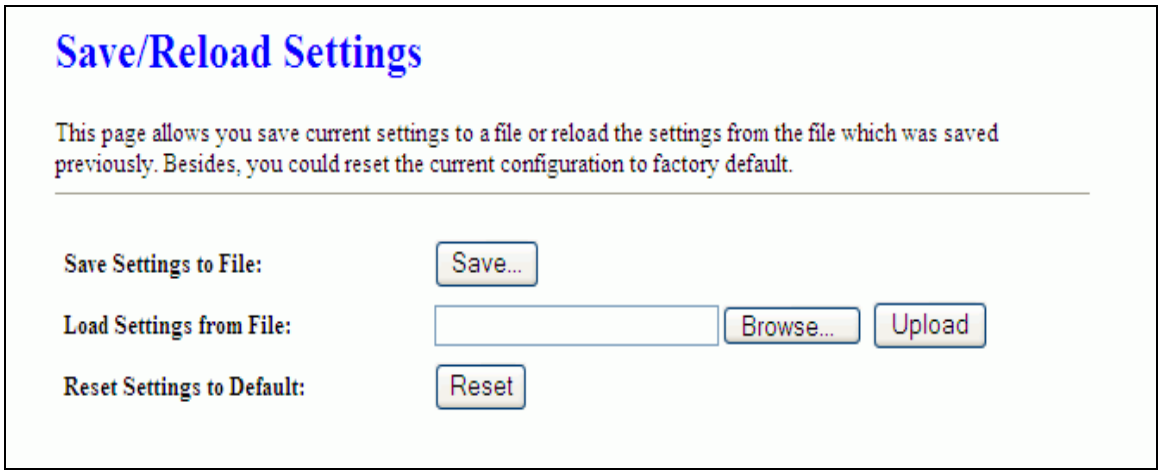
This page allows you upgrade the Access Point firmware to new version. Please note, do not power off the device during the upload because it may crash the system.

Upgrade Firmware
This page allows you upgrade the Access Point firmware to new version. Please note, do not power off the device during the upload because it may crash the system.
Select File:
Browse...
Upload
Reset

Parameter	Description
Select File	Click the ***Browse*** button to select the new version of web firmware image file.
Upload	Click the ***Upload*** button to update the selected web firmware image to the WLAN Broadband Router.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

10.7 Save / Reload Settings

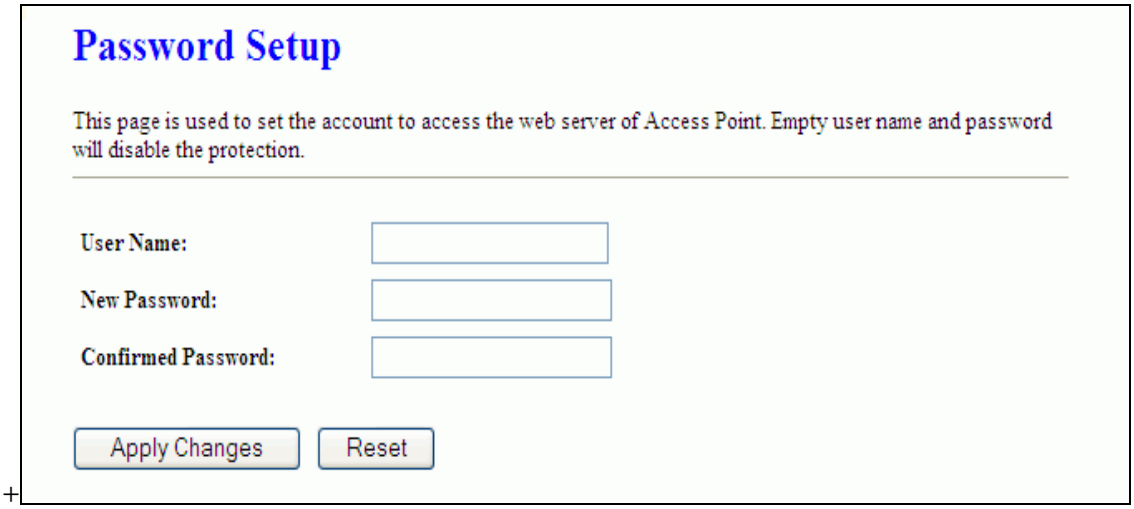
This page allows you save current settings to a file or reload the settings from the file that was saved previously. Besides, you could reset the current configuration to factory default.


Save/Reload Settings
This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.
Save Settings to File:
Save...
Load Settings from File:
Browse...
Upload
Reset Settings to Default:
Reset

Parameter	Description
Save Settings to File	Click the ***Save*** button to download the configuration parameters to your personal computer.
Load Settings from File	Click the ***Browse*** button to select the configuration files then click the ***Upload*** button to update the selected configuration to the WLAN Broadband Router.
Reset Settings to Default	Click the ***Reset*** button to reset the configuration parameter to factory defaults.

10.8 Password

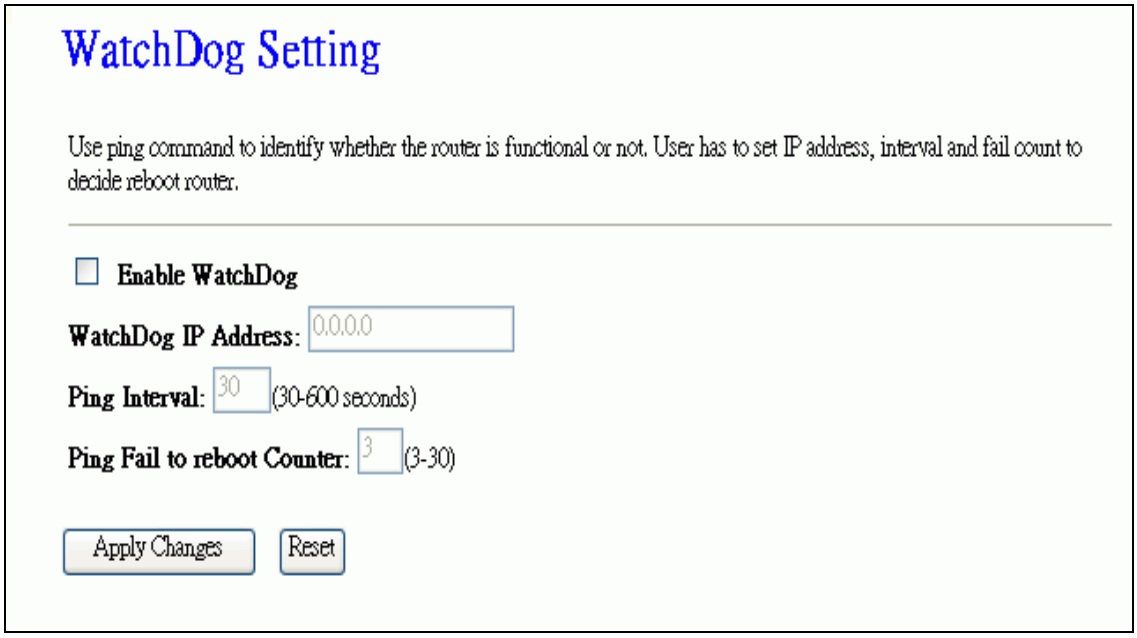
This page is used to set the account to access the web server of Access Point. Empty user name and password will disable the protection.


Password Setup
This page is used to set the account to access the web server of Access Point. Empty user name and password will disable the protection.
User Name:
New Password:
Confirmed Password:
Apply Changes
Reset

Parameter	Description
User Name	Fill in the user name for web management login control.
New Password	Fill in the password for web management login control.
Confirmed Password	Because the password input is invisible, so please fill in the password again for confirmation purpose.
Apply Changes	Clear the ***User Name*** and ***Password*** fields to empty, means to apply no web management login control. Click the ***Apply Changes*** button to complete the new configuration setting.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

10.9 WatchDog

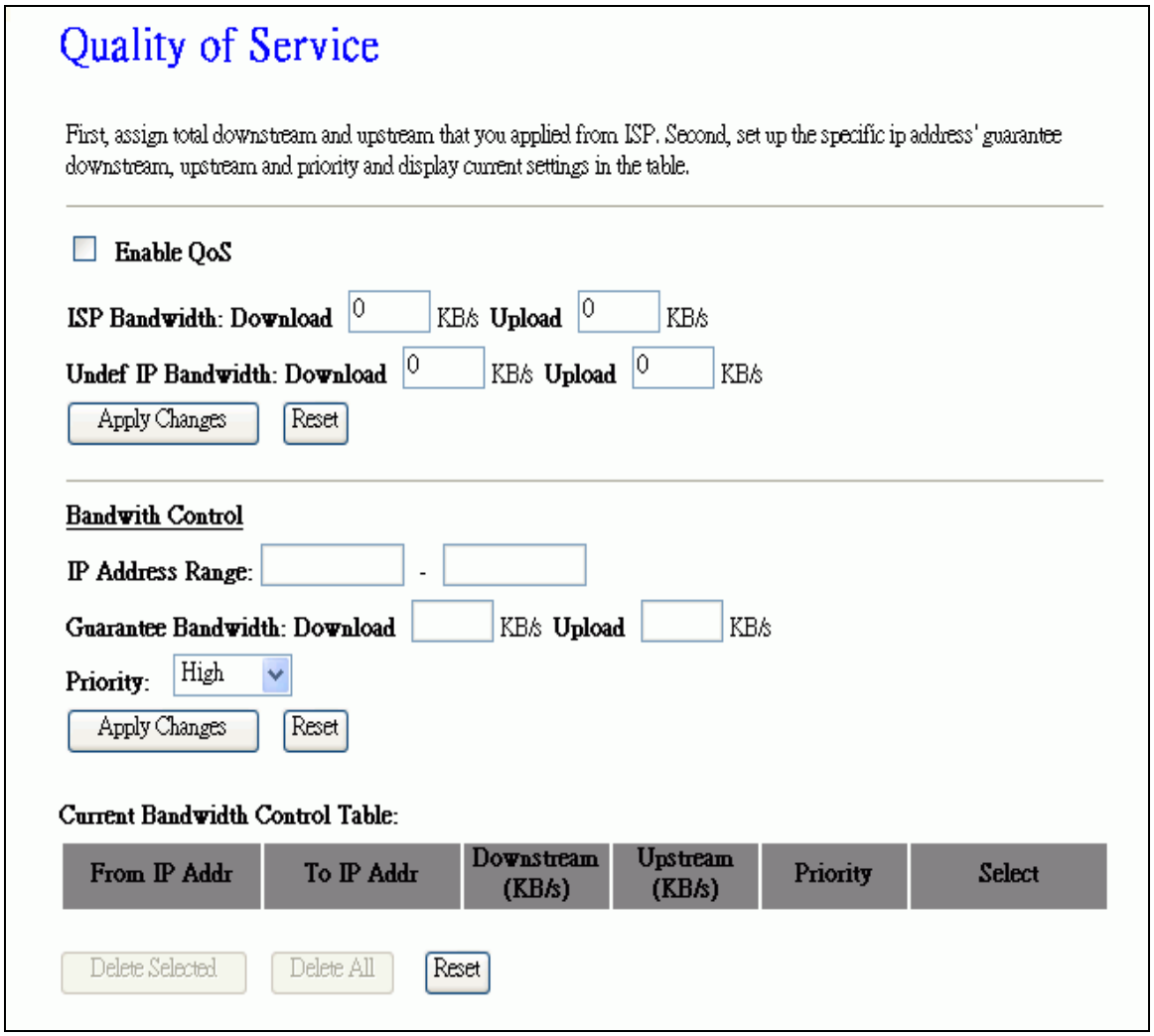
This page is used to do watchdog function using ping command. User set IP address, interval and ping fail count conditions to decide whether router reboots or not.


WatchDog Setting
Use ping command to identify whether the router is functional or not. User has to set IP address, interval and fail count to decide reboot router.
Enable WatchDog
WatchDog IP Address: 0.0.0.0
Ping Interval: 30 (30-600 seconds)
Ping Fail to reboot Counter: 3 (3-30)
Apply Changes
Reset

Parameter	Description
Enable WatchDog	Click to enable watchdog.
WatchDog IP Address	IP address that is referred.
Ping Interval	Fill in the value by seconds.
Ping Fail to reboot Count	Fill in the value that is the threshold to reboot router when ping fails.
Apply Changes	Click the ***Apply Changes*** button to complete the new configuration setting.
Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.

10.10 QoS

This page is used to do bandwidth control by ip address. User sets total and undefined bandwidth first. Then set bandwidth by range of ip addresses.

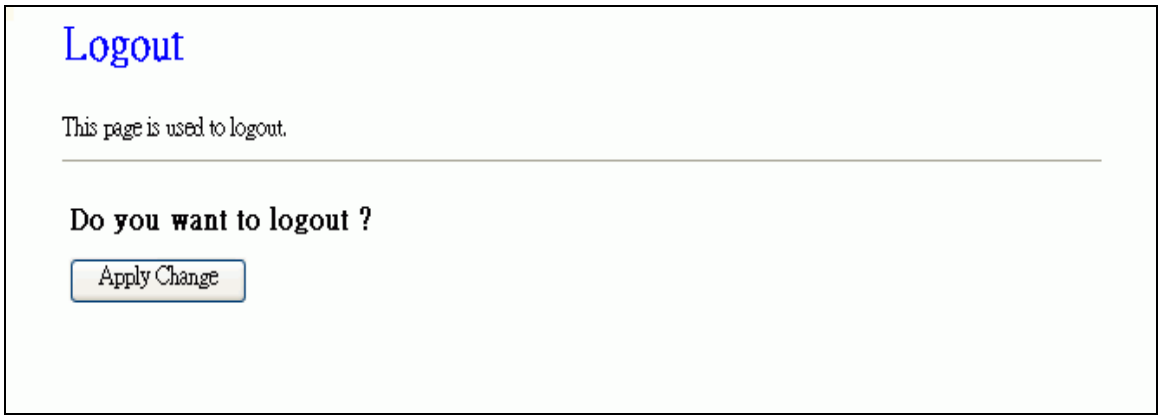

Quality of Service
First, assign total downstream and upstream that you applied from ISP. Second, set up the specific ip address' guarantee downstream, upstream and priority and display current settings in the table.
Enable QoS
ISP Bandwidth: Download 0 KB/s Upload 0 KB/s
Undef IP Bandwidth: Download 0 KB/s Upload 0 KB/s
Apply Changes
Reset
Bandwith Control
IP Address Range: -
Guarantee Bandwidth: Download KB/s Upload KB/s
Priority: High
Apply Changes
Reset
Current Bandwidth Control Table:
From IP Addr
To IP Addr
Downstream (KB/s)
Upstream (KB/s)
Priority
Select
Delete Selected
Delete All
Reset

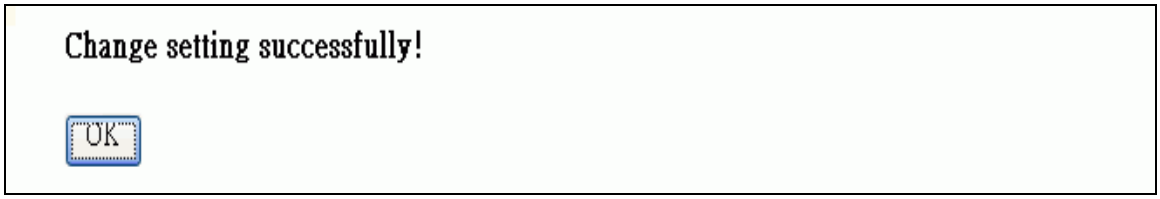
Item	Description
Enable QoS	Click to enable QoS.
ISP Bandwidth	
Download	Fill in the value that is the download stream from ISP by KB/s.
Upload	Fill in the value that is the upload stream from ISP by KB/s.
Undef IP Bandwidth	
Download	Define the download bandwidth that is not defined.
Upload	Define the upload bandwidth that is not defined.
Apply Changes	Click the ***Apply Changes*** button to complete the new configuration setting.

Reset	Click the ***Reset*** button to abort change and recover the previous configuration setting.
Bandwidth Control	
IP Address Range	Set start and end ip address.
Guarantee Bandwidth	
Download	Fill in the value by KB/s.
Upload	Fill in the value by KB/s.
Piority	Click to pick High, Medium or Low
Apply Changes	Click the Apply Changes button to complete the new configuration setting. It is added into Current Bandwidth Control Table.
Reset	Click the Reset button to abort change and recover the previous configuration setting.
Delete Selected	Click to delete the selected ip addresses that will be removed from the Current Bandwidth Control Table.
Delete All	Click to delete all the registered entries from the ip addresses Current Bandwidth Control Table.
Reset	Click the Reset button to abort change and recover the previous configuration setting.

10.11 Lougout

This page is used to logout web management page. This item will be activated next time you login after you define user account and password.





Parameter	Description
Apply Change	Click the ***Apply Change*** button, Then click ***OK*** button to logout.

Appendix A Glossary

802.11b - An IEEE wireless networking standard that specifies a maximum data transfer rate of 11Mbps and an operating frequency of 2.4GHz.

802.11g - An IEEE wireless networking standard that specifies a maximum data transfer rate of 54Mbps, an operating frequency of 2.4GHz, and backward compatibility with 802.11b devices.

Adapter - This is a device that adds network functionality to your PC.

Ad-hoc - A group of wireless devices communicating directly with each other (peer-to-peer) without the use of an access point.

Backbone - The part of a network that connects most of the systems and networks together, and handles the most data.

Bandwidth - The transmission capacity of a given device or network.

Beacon Interval - Data transmitted on your wireless network that keeps the network synchronized.

Bit - A binary digit.

Browser - An application program that provides a way to look at and interact with all the information on the World Wide Web.

CSMA/CA (**C**arrier **S**ense **M**ultiple **A**ccess/**C**ollision **A**voidance) - A method of data transfer that is used to prevent data collisions.

CTS (**C**lear **T**o **S**end) - A signal sent by a wireless device, signifying that it is ready to receive data.

Database - A collection of data that is organized so that its contents can easily be accessed, managed, and updated.

DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) - A networking protocol that allows administrators to assign temporary IP addresses to network computers by "leasing" an IP address to a user for a limited amount of time, instead of assigning permanent IP addresses.

Download - To receive a file transmitted over a network.

DSSS (**D**irect-**S**equence **S**pread-**S**pectrum) - Frequency transmission with a redundant bit pattern resulting in a lower probability of information being lost in transit.

DTIM (**D**elivery **T**raffic **I**ndication **M**essage) - A message included in data packets that can increase wireless efficiency.

Encryption - Encoding data transmitted in a network.

Ethernet - IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium.

Firmware - The programming code that runs a networking device.

Fragmentation -Breaking a packet into smaller units when transmitting over a network medium that cannot support the original size of the packet.

Gateway - A device that interconnects networks with different, incompatible communications protocols.

Hardware - The physical aspect of computers, telecommunications, and other information technology devices.

IEEE (The **I**nstitute of **E**lectrical and **E**lectronics **E**ngineers) - An independent institute that develops networking standards.

Infrastructure - A wireless network that is bridged to a wired network via an access point.

IP (**I**nternet **P**rotocol) - A protocol used to send data over a network.

IP Address - The address used to identify a computer or device on a network.

ISM band - Radio bandwidth utilized in wireless transmissions.

ISP (**I**nternet **S**ervice **P**rovider) - A company that provides access to the Internet.

LAN - The computers and networking products that make up your local network.

MAC (**M**edia **A**ccess **C**ontrol) **Address** - The unique address that a manufacturer assigns to each networking device.

Network - A series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

Node - A network junction or connection point, typically a computer or work station.

Packet - A unit of data sent over a network.

Passphrase - Used much like a password, a passphrase simplifies the WEP encryption process by automatically generating the WEP encryption keys for Linksys products.

Port - The connection point on a computer or networking device used for plugging in cables or adapters.

Roaming - The ability to take a wireless device from one access point's range to another without losing the connection.

Router - A networking device that connects multiple networks together.

RTS (**R**equest **T**o **S**end) - A networking method of coordinating large packets through the RTS Threshold setting.

Server - Any computer whose function in a network is to provide user access to files, printing, communications, and other services.

SNMP (**S**imple **N**etwork **M**anagement **P**rotocol) - A widely used network monitoring and control protocol.

Software - Instructions for the computer. A series of instructions that performs a particular task is called a "program".

SOHO (**S**mall **O**ffice/**H**ome **O**ffice) - Market segment of professionals who work at home or in small offices.

Spread Spectrum - Wideband radio frequency technique used for more reliable and secure data transmission.

SSID (**S**ervice **S**et **ID**entifier) - Your wireless network's name.

Static IP Address - A fixed address assigned to a computer or device that is connected to a network.

Subnet Mask - An address code that determines the size of the network.

Switch - 1. A data switch that connects computing devices to host computers, allowing a large number of devices to share a limited number of ports. 2. A device for making, breaking, or changing the connections in an electrical circuit.

TCP (**T**ransmission **C**ontrol **P**rotocol) - A network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

TCP/IP (**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol) - A set of instructions PCs use to communicate over a network.

TKIP (**T**emporal **K**ey **I**ntegrity **P**rotocol) - a wireless encryption protocol that provides dynamic encryption keys for each packet transmitted.

Topology - The physical layout of a network.

Upgrade - To replace existing software or firmware with a newer version.

WEP (**W**ired **E**quivalent **P**rivacy) - An optional cryptographic confidentiality algorithm specified by IEEE 802.11 that may be used to provide data confidentiality that is subjectively equivalent to the confidentiality of a wired local area network (LAN) medium that does not employ cryptographic techniques to enhance privacy confidentiality.

WPA (**W**i-Fi **P**rotected **A**ccess) - a wireless security protocol using TKIP (Temporal Key Integrity Protocol) encryption, which can be used in conjunction with a RADIUS server.